Kant, Cognitive Synthesis, and Causality

By

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Abstract

By marshalling Kant in new ways, this thesis explores the relationship between cognitive synthesis and causality. It is argued that the causal connections constitutive of cognitive experience are of a character that is radically different from that of causal connections that are not constitutive of cognitive experience. Whereas the latter are satisfactorily covered by Kant's conception of causality as rule-governed succession this is not true, it is argued, of the causality that is constitutive of cognitive experience. The idea, introduced by Hume and endorsed by Kant, that causality is nothing but a kind of rule-governed succession is one that cannot be maintained, it is argued, in the face of considerations regarding the nature of cognitive synthesis. The thesis examines Kant's arguments in the Analytic of Principles, for the Axioms of Intuition, the Anticipations of Perception, and the First and Second Analogies. The aim is to show that even where these arguments fail, their respective failures help towards the explication of a conception of synthesis that is constitutive of understanding as such. It is argued that the syntheses that are constitutive of understanding are unspecifiable in character – that is, they cannot be unambiguously described and defined – and that accordingly the causal connections through which these syntheses are effected could not be instantiations of any kind of rule-governed succession. The thesis thus has implications for what our conception of free will ought to involve. It implies both that free will is incompatible with determinism and that free will should not be thought of as requiring any disengagement from the causal concatenations of nature or of human life.

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Table of Contents

Introduction

It is argued in this thesis that there are causal connections which are constitutive of cognitive experience which are of a character that is radically different from that of causal connections that are not constitutive of cognitive experience. Whereas the latter are satisfactorily covered by Kant's conception of causality as rule-governed succession this is not true, it is argued, of the causality that is constitutive of cognitive experience.

It must be emphasised that, considered as an attempt to further our understanding of Kant's conception of cognitive experience, the coverage in this thesis is very incomplete. Since the concern is with the prerequisites for having experience that is cognitive, in particular perceptual cognitive experience, apart from the Third Antinomy, the Transcendental Dialectic and the Transcendental Doctrine of Method have been prescinded from. The same applies to the Transcendental Aesthetic, although, in accordance with what Kant insists upon, an objective empirical world in space and time is taken for granted. This still leaves the Transcendental Deduction as a significant omission. Throughout, Kant's conception of a synthesis of apprehension, or something close to it, is taken for granted. But the *arguments* of the Transcendental Deduction have been set aside in the belief that the resulting incompleteness will not impugn the essential correctness of the claims defended. This thesis is not a work of Kant scholarship. Rather, it is a work that broadens and develops certain central themes in Kant's Critique for the purpose of providing a fruitful avenue by which to approach the problem of causation and cognitive experience.

The argument is set out stage by stage in the course of a critical examination of certain parts of Kant's *Critique*, namely – in the order examined – the arguments of the Second and of the First Analogies, the Anticipations of Perception, the Axioms of Intuition, the Logical Function of the Understanding in Judgments, and the Third Antinomy.

There are eight chapters. An outline of their respective roles in the above argument is as follows. Chapter one examines Kant's argument of the Second Analogy, which (to make use of Kant's terminology) may be regarded

as his „Copernican' response specifically to Hume's sceptical conclusions about our knowledge of causality. If Kant's argument of the Second Analogy argument is sound then every event would be causally determined in accordance with some rule, there would be no room for any other kind of causality and the main argument of this thesis would not even get off the ground. Parts one to four of the chapter are therefore devoted to showing that the argument of the Second Analogy fails.

There is another reason why the thesis begins with the Second Analogy argument. It is argued in part five of chapter one that notwithstanding the failure of the Second Analogy argument a „Copernican' response to Hume is still justified: the trust in causality that Hume relegates to custom or habit is instead (as Kant realises) *constitutive* of cognitive experience. But instead of concluding (as Kant does) that for cognitive experience to be possible every event must be experienced as causally determined we are entitled only to draw the following conclusion: there could be no such thing as cognitive experience unless, when taking into account what is *presently* offered to us through sensibility, we also take into account relevant *previous* offerings as a guide as to what to expect will be offered to us through sensibility in the *future*, whether this be immediate or more remote. Unlike Kant's stronger conclusion from the Second Analogy argument, the possibility of their being events that wholly or in certain respects are uncaused or events that are caused without instantiating any case of rule-governed succession is not ruled out. This weaker Copernican revolution is foundational for this thesis. For it speaks of what (to make use again of Kant's terminology) may be called *cognitive synthesis* or *syntheses of the understanding* – namely, the taking into account together of such past and present offerings from sensibility as to enhance one's readiness and ability to take into account any from a range of possible future offerings – and the argument of this thesis is that the causal connections requisite for these syntheses could not be such as to instantiate any laws that determine, or any rules that spell out, how the syntheses are to be effected.

The conception of cognitive synthesis developed in this thesis is derived from Kant's conception of the synthesis of the understanding. Kant's arguments concerning the Axioms of Intuition, the Anticipations of Perception, the Analogies of Experience, and the Postulates of Empirical Thought in

General demarcate the essential tasks that need to be accomplished by the syntheses of the understanding in constituting cognitive experience: the tasks, for example, of perceiving that something is undergoing a *change*, of perceiving that each of a *number* of things has a certain attribute, or of perceiving that a certain eventuality is *possible* given the present circumstances. With the benefit of hindsight it can be seen that a major qualification is required because of what is now known about our kinship with other animals and about the cognitive endowments of many of these animals: there are, for example, animals that have the capacity for cognitive experience although they cannot count or distinguish between what is necessarily the case and what is contingent. Nonetheless, with the above arguments Kant has identified some of the main cognitive tasks that need to be accomplished through cognitive synthesis in the case of *human* understanding. Only some of the above arguments are examined in this thesis. No doubt a more complete coverage would be desirable but the arguments that are examined provide a sufficient foundation to support what is here argued for.

The general character of cognitive synthesis is examined in chapters two to four where three ‚directions' of synthesis are respectively identified – namely, syntheses which are primarily directed from what is present in sensibility to what is past, from what is present to what might reasonably be anticipated for or expected in the future, and from what is present to other things that are also present. The main purpose of these three chapters is to show that cognitive synthesis, in whichever direction, appears to have a distinctive character, a character which is there sketched and which may be called "unspecifiable." It is argued that to all appearances there could be no *rules* for specifying or spelling out what items from sensibility should be taken into account with what other items – whether past or present – in order for the resulting synthesis to make enough sense to be adjudged a *cognitive* synthesis, i.e. a synthesis that is constitutive of (some) understanding. Cognitive synthesis appears to be of such a character as to render it impossible to be described satisfactorily in a way that is *both* comprehensive *and* detailed.

Not until part three of chapter eight is it argued that appearances here are not deceptive and that the character of cognitive synthesis really is unspecifiable. But chapters two to four prepare the way for this argument by

sketching out what is meant by saying that cognitive synthesis is unspecifiable. The considerations covered in these three chapters should not, though, be regarded merely as serving a means to an end. For if the criticisms of Kant's argument of the First Analogy and of what he says about the Anticipations of Perception and the Axioms of Intuition that are presented there are sound then it follows that Kant's conception of cognitive experience is partly correct and partly not. It is fundamentally correct in that cognitive experience is necessarily a result of cognitive synthesis. And Kant, as noted earlier, also correctly identifies some of the main tasks that cognitive synthesis has to accomplish. But it is argued that Kant is incorrect in maintaining that the cognitive syntheses requisite for understanding something – anything – are constituted by the subsumption of what is given to us through sensibility under *concepts*, whether empirical concepts such as ‚dog' or ‚chair', or categories such as ‚substance'. For the cognitive syntheses requisite for understanding have to be such as to ensure that concepts are applied *appropriately*, i.e. with understanding. Understanding is not *derived from* applying concepts to the offerings from sensibility. Rather, the latter is a *manifestation of* understanding.

In chapter five a bird's-eye-view is taken of what has been argued for thus far. It is suggested that there is some point in speaking of causality as the one and only ‚category' of the understanding. Kant's conception of cognitive synthesis is compared with the modified conception of it developed in this thesis. And finally, and of more direct relevance to the main thesis, it is argued that it does at least make sense to speak of causal connections that are not instantiations of rule-governed succession: the idea, introduced by Hume and endorsed by Kant, that causality is nothing but a kind of rule-governed succession is one that we should be willing to drop in the light of reasonable argument about things relevant to causality, especially things that have been largely overlooked. Unless this argument is sound the main conclusion of the thesis – that the causal connections constitutive of understanding could not be instances of rule-governed succession – would have to be rejected on *a priori* grounds as incoherent.

Chapter six moves beyond the issue of cognitive synthesis. The focus is rather on what cognitive synthesis results in. According to Kant it is of the general nature of a judgment, and notwithstanding the need for various

qualifications this is acknowledged (in part one) to capture much of the truth. But, as with cognitive synthesis, Kant fails to notice the apparently unspecifiable character that pertains to understanding – here, the apparently unspecifiable character of the behavioural *dispositions* that are constitutive of understanding. As Wittgenstein noted, it is the fundamental nature of understanding that it cannot be explicated in terms of anything else. This is partly what is meant by its being „unspecifiable'.

It is argued in part two of chapter six firstly that to speak at all of judgments as constitutive of understanding the judgments concerned would, by and large, have to be both true and also relevant to the contexts in which they are made; and secondly that there appear to be no rules for distinguishing in general between either the true and the false or between the relevant and the irrelevant. Again there is a need to take seriously the possibility that there is something unspecifiable about understanding which we need to take into account if the fundamental nature of understanding is not to be misunderstood. Doubt is also cast on the theoretical status in Kant's philosophy of the distinction between pure and practical reason.

In part three of chapter six Kant's theory of judgment is examined more closely. The issues addressed here bring to our notice that the main argument of the thesis has broad and unexplored implications for our understanding of cognitive experience.

It is argued that if indeed all that understanding involves is only characterisable in general terms and not able to be spelt out comprehensively and in detail then Kant's claim that understanding is an outcome of *work*, i.e. inner actions or activity, performed on what is given to us through sensibility, would have to be abandoned. Instead, understanding could reasonably be thought of as a function of the receptive side of the mind. Chapter seven critically examines Kant's Third Antinomy. It is argued that although Kant defines the thesis and the antithesis as logical contradictories of one another what he actually means by the thesis is only the logical contrary of the antithesis: they could not both be true but they could both be false. Kant's antithesis asserts that every event is an instance of rule-governed succession, which is the same as the conclusion of his argument of the Second Analogy, and his thesis is *defined* as simply the negation of this but *understood* by Kant

as asserting that some causal connections can be initiated *de novo*, i.e. without their initiating event having any causal connection with any antecedent event. The possibility, explicated in earlier chapters, that there are causal connections that are not instantiations of any rule-governed succession has been overlooked. This latter possibility, it is argued, should be taken seriously. As for the possibility that some causal connections can be initiated *de novo* this, it might be suggested, is exemplified by radioactive decay and many other phenomena whose correct description requires quantum theory. But even if this is correct the origination of causal connections *de novo* would not by itself be equivalent to free-will. For, as has been widely recognised, were we to originate causal connections *de novo* it would be pure luck if these originations make any sense in relation to what else has happened or is happening in the world. Such originations would be merely arbitrary sportings.

The thesis culminates in chapter eight where it is argued (in part three) that the syntheses that are constitutive of understanding *are* unspecifiable in character – that is, they cannot be unambiguously described and defined – and that accordingly the causal connections through which these syntheses are effected could not be instantiations of any kind of rule-governed succession. Counter-arguments are also considered (in parts one and two), but these, it is argued, either fail or fall well short of being conclusive. A decision regarding this issue comes down to a matter of judgment, and to make a sound judgment here a great deal needs to be taken into account, including much that cannot be compressed into even a reasonably succinct argument. It is in the light of this consideration that the connection between chapter eight and the earlier chapters should be regarded. Each of the latter contributes something towards a better understanding of the case defended in this thesis.

Chapter One

The Second Analogy and Kant's Copernican Insight

In his Prolegomena to any Future Metaphysics Kant speaks of how he was awakened from his dogmatic slumber by the writings of David Hume.[1] This awakening was, we are meant to take it, a moment of insight – the primary insight that, as Kant himself maintained, lies behind his Critique of Pure Reason. In his An Enquiry Concerning Human Understanding[2] Hume had argued that although from a practical point of view we are often – depending on the circumstances – justified in saying that a certain event was caused by a certain immediately antecedent event – or events – such attributions of causality have no ultimate rational foundation because the *necessary* character of the connection between events which is implied in saying that one event is caused by another cannot be derived either through logic or through past experience. The awakening that Kant speaks of, the primary insight behind his first Critique, may be roughly stated as follows: Hume was so far right in saying that our ascriptions of causal necessitation amongst events cannot be justified either by logic or by past experience. But he did not pursue his thinking to its proper conclusion. For such attributions of causal necessitation amongst events are a precondition of our having any experience *of* events – as something objective – at all. Such attributions of causal necessitation are therefore a precondition of our having any experience at all of epistemic significance – experience, that is, which could afford us knowledge.

Kant goes on to speak in the Prolegomena[3] of how he found that the essential point of both Hume's critical examination of our attribution of causality and of the above response thereto could be generalised: there are, Kant maintains, other fundamental ideas that are like the idea of causality in

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[1] Kant, Prolegomena to any Future Metaphysics that will be able to present itself as a Science, Lucas, P.G trans. (1962) p. 9 (Paragraph 6, section II). Kant also acknowledges the importance of Hume in relation to the Critique at B19 and at A764-8/B792-6.

[2] Hume, An Enquiry Concerning Human Understanding, Beauchamp, T.L. ed., (2000), section 3) (23) – section 4) (31).

[3] Prolegomena, pp. 9-10 (paragraph 7, section II).

that their application to what we experience cannot be justified logically or through past experience but which are such that their application to what we experience is a precondition of that experience having any epistemic significance at all. Kant calls these ideas the *a priori* concepts of the understanding, *a priori* because they are not derived from experience but imposed by us on (raw) experience as part and parcel of our understanding anything at all of its epistemic significance. This is Kant's „Copernican revolution' in philosophy. I take it that the analogy Kant has in mind is this: just as Copernicus taught us that the rising and setting of the sun is only a necessary consequence of our viewing the sun from the daily revolving earth, so the applicability of the concept of causality and of the other categories to what we experience is only a necessary consequence of our having the finite cognitive powers that we have.[4]

These considerations provide another reason for beginning our enquiry with an examination of Kant's argument of the Second Analogy. For it is with this argument that Kant spells out his Copernican insight in regard to Hume's analysis of our idea of causality. It is here that Kant argues that the concept of causality is not, as Hume had argued, derived by us *from* experience – as a sort of high-level habit regarding our expectations about the future – but is imposed by us *on* the raw material of experience – offered to us through sensibility – in the very business of our bringing the latter – through the synthesis of the understanding – into cognitive awareness and of our thereby attaining experience of epistemic significance.

Kant draws a distinction between mathematical and philosophical analogies. The former assert the equivalence of two quantitative relations, whereas the latter assert the equivalence only of two qualitative relations. The former therefore allow us to deduce the fourth term whenever we are given the three other terms, whereas the latter, from three given terms, allow us to deduce only that there is some fourth term that is related to the unpaired given term in the same way as the corresponding term of the given pair of terms is

[4] Probably unbeknownst to Kant, Hume had already generalised his critical examination of causality to cover material objects and the self in his Treatise, which it is unlikely that Kant had read at the time he was writing his first Critique. Hume's Enquiry, though, which Kant had read, does not generalise from the critical examination of causality. See Guyer, P., Knowledge, Reason and Taste (2008) pp. 1-7.

related to the other term of the given pair. Thus if x is an unknown quantity and a, b and c are known quantities, then if x is related to a in an analogous way to the way that b is related to c, the value of x is deducible. On the other hand, if x, a, b and c refer to qualitatively different things, x being unknown and a, b and c known, then if x is related to a in an analogous way to the way b is related to c, we cannot deduce what x is: we can but reaffirm that if the above analogy holds then x *is* related to a in the same way that b is related to c. According to Kant's Second Analogy, if b and c are known and are related as cause and effect and a is also known and corresponds to c then we can deduce that there is something, x, which is related to a as b is to c, i.e. as its cause, although we cannot deduce what x is.[5] The *argument* of the Second Analogy has as its conclusion simply that "All alterations take place in conformity with the law of the connection of cause and effect,"[6] without referring to any analogous cases such as we have been speaking of. But what has been said makes it clear that the conclusion of the argument of the second analogy is only *that* any alteration in anything has a cause without this giving us the slightest hint as to *what* the cause might be – Kant maintains that only empirical investigation can enable us to find out what the cause of any given alteration is.

Kant's argument of the second analogy is concerned with what is involved in our being able to perceive *events* (in Kant's broad use of the word), i.e. changes in things. Hume's arguments about causality, on the other hand, are concerned with a relationship – of cause and effect – that may hold *between* events. Hume was not concerned with what is involved simply in perceiving events: he took our ability to perceive events, such as a light coming on, as given. But for Kant in the Second Analogy argument it is our perception of, i.e. our having objective experience of, events as such that raises a problem. But, unlike Nelson Goodman for example, who with his ‚grue' and ‚bleen' argues that Hume's undermining of the presumed

[5] Kant, Critique of Pure Reason, trans. Kemp Smith, (1963) B 222, pp. 210-211. Also, Körner, Kant (1955) p. 83.
[6] Critique of Pure Reaon, B 232, p. 218.

foundations of rationality had not been carried far enough[7], Kant's intention in his second analogy argument is to show that the answer to his question about perceiving events as such *also* allays Hume's misgivings in regard to the rational basis of our attributions of causal necessitation between events.

This chapter is divided into five parts. Part one seeks to explicate both the question that Kant identifies regarding event-perception as well as the general character of his transcendental idealism insofar as this needs to be understood before his answer to the question can be understood.

Part two examines Kant's answer to the question he has identified. Is it a satisfactory answer or does it involve a *non sequitur* as P.F Strawson has argued?[8] I maintain that Kant's answer is one possible answer – a satisfactory answer – to his question, and that Strawson is mistaken: it does not involve a *non sequitur*. This does not mean, though, that Kant's second analogy argument is satisfactory. That would follow only if Kant's answer to his question about event perception were the *only* satisfactory answer.

Part three focuses on the principle of universal causality which is entailed by Kant's answer to his question about event perception and which constitutes the conclusion of his second analogy argument. Does this principle, understood as Kant intended it, i.e. as presupposing transcendental idealism, justify Kant's Copernican response to Hume? Interpreted in what Henry Allison calls the "strong" sense it does, but interpreted in Henry Allison's "weak" sense, an interpretation which he (Allison) defends[9], it is, I maintain, not clear whether the principle does justify Kant's Copernican response to Hume. I argue in favour of the strong interpretation. If Kant's answer to his question about event perception is the *only* satisfactory answer and if this answer does entail the principle of universal causality as interpreted in the *strong* sense then, as Kant intended, his second analogy argument would vindicate his Copernican response to Hume.

Part four argues that whether from a transcendental idealist perspective or not, Kant's answer to his question about event perception is not the only

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[7] N. Goodman, Fact, Fiction and Forecast (1954) chapter three.
[8] P. Strawson, The Bounds of Sense: An Essay on Kant's Critique of Pure Reason (1966) pp. 137-8.
[9] H. Allison, Kant's Transcendental Idealism (1983) pp. 230-234. Also, Allison, Idealism and Freedom (1996) pp. 80-90.

satisfactory answer. Nor, it is argued, is it the best answer. Kant's second analogy argument therefore fails to achieve what Kant intended it to achieve. The principle of universal causality, whether in the strong or in the weak sense, is not inferable from an analysis of event perception.

Part five argues that notwithstanding the above points Kant's Copernican response to Hume is essentially correct. It is not necessary to accept transcendental idealism to accept this, although it does help to look at things, as Kant nearly always does in the first Critique, from a first-person point of view. It is argued that rather than asking, as Kant does, about the preconditions of our perceiving – of our having objective experience of – events, we should instead ask about the preconditions of our *understanding* anything at all. If we do so, I then go on to argue, then rather than thinking, as Kant does, in terms of an a priori *category* of causality which we need to impose on the offerings of sensibility irrespective of whatever it is that is hereby offered to us, in order to render the latter objective we should instead think in terms of a *cognitive propensity*, a propensity the exercising of which is a precondition of our attributing causal connections between things not *irrespective* of the offerings of sensibility but, on the contrary, *taking into account* the latter. This, I argue, is the way it is for us. It does not follow that we have to abandon the distinction, so central to Kant's philosophy, between the *a priori* and the empirical in cognitive experience, but it does follow that the distinction cannot be applied in the clear-cut way that Kant assumes.

1) Kant's Question about Event-Perception

In the second and longest of his six formulations of the argument of the second analogy (B 235 – B 239) Kant presents two contrasting concrete examples to help to explicate what the question is that he has identified regarding the perception of change. Let us begin with these examples. One is of our viewing a house whilst moving our gaze from the top of the house to the bottom, or from the left to the right of it, or vice-versa. The other example is of our viewing a ship sailing downstream. Our experience in the two cases is obviously very different, and not just because in the first case we are looking at a house and in the second case a ship. With the house the only event involved – if such we may call it – is our *looking* at the house: there is no

change to or in the house itself. With the ship, by contrast, there is a change in its position as it sails downstream – an event in Kant's wide use of the term. In both cases there are changes in what is being given to us through what Kant calls our faculty of sensibility – in this case our capacity to see, though only in a minimal sense, a sense that utterly precludes any sort of understanding whatsoever. But with the ship we perceive an event and with the house we do not. In what does the difference consist? This, essentially, is Kant's question.

In characterising Kant's question about event-perception in the above way, using a minimum of theory-laden terms, I have sought to detach it from his transcendental idealism. For I believe that his question is an important one for philosophy regardless of whether Kant's transcendental idealism is true, false or even coherent. It is acknowledged, though, that Kant's thinking about event-perception is tied to his transcendental idealism, and that, in particular, the *answer* he gives to his question about event-perception presupposes the latter and is unintelligible without it. This is a suitable place, therefore, to outline the basics of Kant's transcendental idealism. We shall then be in a position to see how Kant's commitment to transcendental idealism affects his understanding of his own question about event-perception, and we shall also have the essential background for understanding Kant's transcendental idealist answer to the question.

Kant holds that we do not and cannot have any ‚cognitive access' to things as they are in themselves: we have cognitive access only to what is given to us through our faculty of sensibility. By itself, that which we are given through sensibility does not amount to knowledge, not even knowledge at its most rudimentary. It constitutes only the raw material for knowledge.[10] To attain (empirical) knowledge requires that cognitive work be carried out on the offerings of sensibility. Broadly speaking, this work consists in the subsuming of particular items that are given to us through sensibility under concepts, both empirical concepts, such as ‚dog' and ‚run', whose derivation

[10] Indeed, the mere offerings of sensibility do not even constitute experience in the sense of the term understood by Kant, which is that of what we might call *cognitive* experience. We may perhaps think of these offerings of sensibility as William James' "blooming, buzzing confusion", though without the confusion, for to be confused presupposes some desire to understand, and this could not have its source merely in sensibility.

depends on the offerings of sensibility, and *a priori* concepts such as ‚number', ‚five', and ‚cause', whose derivation does not. Among the latter Kant picks out for close attention what he calls the categories: these are *a priori* concepts which are not derivable from any other *a priori* concepts – as ‚five' is from ‚number', for example – but whose applicability *to* what is given to us through sensibility makes cognitive experience possible.[11] Among the categories are unity, plurality and totality and, of course, causality.

To complete our sketch it should be said that Kant distinguishes between what he calls the pure categories and the schematised categories.[12] In the case of causality the pure category, which is the category by itself in maximal abstraction, is essentially the idea of one thing's being the ground or source of something else, whereas the schematised category, which is the category in its application to the temporal ordering of what is given to us through sensibility, is the idea of succession in accordance with a rule.

Because Kant's understanding of event-perception is tied to his transcendental idealism he maintains more than that the judgment involved in perceiving an event is made *in the light of* what is given to us through sensibility. He maintains further that it refers or applies only to what is given to us through sensibility and not to things in themselves. Hereby, according to Allison, our judgment *determines* the thought of the x changing from A to not-A.[13]

2) Kant's Answer to His Question about Event-Perception

According to Kant's transcendental idealism, as already set out in the first Critique well before his presentation of the Second Analogy argument, all our experience is necessarily in time because everything that is given to us through sensibility is subject to the "form" (as Kant calls it) of time. But by itself what is given to us through sensibility cannot constitute objective experience, i.e. experience of anything objective – or indeed *of* anything at all. In particular, it cannot constitute the perception of an event. For this, what is given to us through sensibility must be ‚subjected to' the categories: the latter

[11] Kant draws the distinction between the categories and the *a priori* concepts that are derivable from them, which he calls the *predicables* of the pure understanding, at B 107-9.
[12] Critique of Pure Reason, B177-187.
[13] Allison, 1983, op. cit. pp. 225-6.

must be ‚applied to' the former. Specifically, it must be subjected to the category of causality, or rather to its schema, which is that of rule-governed succession, if objective succession in anything's state, i.e. an event, is to be experienced. For, in his metaphysical deduction of the categories – from an analysis of the logical functions of Quantity, Quality and Relation in judgments at B102-109 – the category of causality is the only category whose use pertains to *successive* offerings through sensibility.[14] Therefore, if we are to perceive an event then what is given to us through sensibility must be thought by us to have succeeded earlier offerings from sensibility in a rule-governed way. The foregoing not only provides *an* answer to Kant's question about event-perception but provides a reason for maintaining that this answer is the *only* correct answer to his question.

In effect, Kant maintains that to perceive an event *is* to subsume what is given to us through sensibility under the schematised category of causality. In other words, it *is* to think of what is given to us through sensibility as a case of succession according to a rule[15] – or at least to think of it in such a way that, were we to reflect on the matter, we *should* think of it as a case of rule-governed succession. Applied to Kant's ship example this means that in perceiving the ship to be sailing downstream our experience is subjected to a rule (an instantiation of the schematised category of causality) according to which, given the state or condition of the ship when it is upstream the state or condition of the ship when it is further downstream follows necessarily. With such a case as the house example, on the other hand, our experience is not subject to any rule relating to what succeeds what amongst what is given to us through sensibility and because of this lack we do not perceive any event. In Kant's own words:

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[14] Andrew Ward notes that Kant's principle of universal causality, which he calls the Principle of Sufficient Reason, "is the only one, in the Table of Principles, that deals with succession." See A. Ward, Kant: The Three Critiques (2006) p. 74. Allison makes essentially the same point. See Allison (1983) op. cit. p. 226.

[15] Ralf Walker suggests that there might be cases of rule-governed succession which are mediated "by laws we should not wish to call causal", and that there "might even be direct necessary connections between individual events, unmediated by any law." He gives no examples, though, and I am at a loss to Know what he has in mind. Certainly there are many regularities that are not themselves causal, eg. that day follows night, but I can think of no such regularity that is not *mediated* by causal laws. See R.C.S. Walker, Kant (1978) p. 100.

> "I render my subjective synthesis of apprehension objective only by reference to a rule in accordance with which the appearances in their succession, that is, as they happen, are determined by the preceding state. The experience of an event [i.e. of anything as *happening*] is itself possible only on this assumption."[16]

Going by its lengthy treatment by Kant the Second Analogy argument might seem to be very complicated. But, essentially, it is a simple argument. As most commentators have agreed,[17] Kant presents five different formulations of essentially the same argument, as well as a sixth (at B244-6) which is significantly different.[18] Furthermore, each of the presentations of the one argument is itself repetitive. Given that Kant's answer to his question about event-perception is implicit in his transcendental idealist perspective on the human mind in its cognitive capacity, the second analogy argument is, I am maintaining, not long and complicated. How could it be? For it concerns something utterly elemental: our awareness of change. We can enhance our appreciation of this by questioning Strawson's claim that Kant's second analogy argument involves "a non-sequitur of numbing grossness."[19] Strawson sums up his argument as follows:

> "It is conceptually necessary, given that what is observed is in fact a change from A to B, and that there is no such difference in the causal conditions of the perception of these two states as to introduce a differential time-lag into the perception of A, that the observer's perceptions should have the order: perception of A, perception of B – and not the reverse order. But the necessity invoked in the conclusion of the argument is not a conceptual necessity at all; it is the causal necessity of the change occurring, given some antecedent state of affairs. It is a very curious contortion indeed whereby a conceptual necessity based on the fact of a change is equated with the causal necessity of that very change."[20]

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[16] Critique of Pure Reason, A195, B240.

[17] An exception is T.D Weldon who, after noting that the Second Analogy argument "is almost unanimously condemned as a more or less haphazard collection of five or six different proofs of the same proposition hurriedly thrown together for publication" tries to show that the following can be identified: "1. An introductory passage added in the second edition. 2. The proof of the principle. 3. Some explanatory remarks on the meaning of the principle in relation to experimental science". However, what Weldon calls the "proof of the principle" is the significantly *different* argument at B244-6, the details of which Weldon admits to finding "extremely difficult to follow." See T.D. Weldon, Introduction to Kant's Critique of Pure Reason (1945) pp. 191-5.

[18] Allison, (1983) op. cit. p. 222, and A.C Ewing, A Short Commentary on Kant's Critique of Pure Reason (1950) p. 158.

[19] P.F. Strawson, (1966) op. cit. pp. 137-8.

[20] Ibid. p. 138.

This criticism betrays a serious misunderstanding. It disregards Kant's transcendental idealist perspective,[21] and hence disregards the fact that Kant's argument has what might be called a primary and a derivative conclusion. The primary conclusion is not that every event has a cause, but a statement to the effect that it is necessarily the case that the *thought* that ‚this event has a cause' be implicit in the experiencing of any event *as* an event. Of course, given that everyone is capable of perceiving events, if the primary conclusion is correct then the derivative conclusion follows that (as far as we perceiving beings are concerned) every event has a cause. Rather than think of Kant's conclusion about what is cognitively prerequisite for event-perception as having been *inferred*, i.e. supposedly logically deduced, from some premise, we should think of Kant's conclusion as his proposed solution to a problem – essentially, as I have been maintaining, the problem of explaining the difference between the house and ship examples. Thought of in this way the concept of a *non sequitur* has no application here.

3) Kant's Principle of Universal Causality

What does the transcendental principle with which the argument of the Second Analogy concludes – that every event has a cause[22] – imply in regard to the lawfulness of nature and of all that pertains to human life? The question might well come as a surprise. Surely, it might be said, the answer is obvious: to assert that every event has a cause is to imply that there is a lawfulness pertaining to every event in nature or in anything that pertains to human life. It does not imply that we could ever *discover* all the laws concerned, but that they must *exist* is implicit in the principle of universal causality. But this is not the answer given by Henry Allison, who defends what he calls a weak

[21] Both Henry Allison and Lewis White Beck have pointed out that Strawson's criticism ignores Kant's transcendental idealist perspective. See Allison, (1983) op. cit. p. 233 and Lewis White Beck, Essays on Kant and Hume (1978) pp. 151-2. Andrew Ward states that "I do not think that this well-known criticism of the Second Analogy argument could be made by anyone who has grasped the centrality to Kant of his Copernican revolution, his transcendental idealism." A. Ward, (2006) op. cit. p.79.

[22] This statement of the principle is intended to be synonymous both with Kant's B formulation – that all alterations take place in conformity with the law of the connection of cause and effect – and with his A formulation – that everything that happens, that is, begins to be, presupposes something upon which it follows according to a rule.

interpretation of the argument of the second analogy.[23] What, then, is Allison's weak interpretation of the second analogy argument?

The claim is that although, as Kant maintains, the perception of any given event involves a causally necessitated alteration in an object x from its initial state A to a subsequent state B there need be no empirical law or empirical law-like statement derivable from the laws of nature covering the sequence A then B. The idea is that although the sequence from A to B – it may be called „the event-constituting sequence' – is causally necessitated there need not be any empirical law-like statement under which relevantly similar cases can be subsumed, i.e. there need be no statement to the effect that under such and such initial conditions any object of type x which is in a state of type A would undergo a change to a state of type B. In Allison's words:

> "The basic point is that judgments about objective temporal succession do not presuppose that the elements of the succession are connected by empirical laws. All that is presupposed is that there is some antecedent condition (presumably roughly contemporaneous with x's being in state A at t_1), which being given, state B necessarily ensues for this particular x at t_2. There are no additional assumptions regarding the repeatability of the sequence and its relevance to other objects of x's type that are either licensed or required by this presupposition."[24]

One might suppose that Allison is denying that the concept of causality involves the thought of types of event being related by a causal law, that he is maintaining that the concept of causality may thus involve the thought of a unique connection between particulars, namely, between event tokens. But in fact Allison says that he does acknowledge that the concept of causality "involves the thought of event-types related by causal law."[25] How, then, can Allison reconcile this acknowledgment with his weak interpretation of the Second Analogy argument? For with the former he accepts that the idea of a lawfulness between events is part and parcel of the idea of a causal connection between events yet with the latter he maintains – or it would seem that he maintains – that there may be causal connections between events *without* there

[23] Allison, (1983) op. cit. pp. 230-232 and p. 234; also, Allison, Idealism and Freedom (CUP, 1996) pp. 80-91. Essentially the same weak interpretation of the second analogy argument has been defended by Lewis White Beck and Gerd Buchdahl. See Beck, (1978) op. cit. pp. 111-129, and Buchdahl, Metaphysics and the Philosophy of Science, (1969), pp. 651-665.
[24] Allison, (1983) op. cit. p. 231.
[25] Allison, (1996) op. cit. p. 85.

being any lawfulness involved. On the face of it, this is self-contradictory. Allison is aware of this, and he proposes that his apparently contradictory claims may be reconciled as follows.

> "It does not follow from the fact that a causal law affirms a connection between event-types, which I take to be uncontroversial, that there must be more than a single instantiation of each type. After all, the strict universality and necessity of the principle that events of type-A are succeeded by events of type B is not undermined by a scenario in which there is only a single event of each type. In short, for all that can be inferred from the concept of causality, the possibility remains open that there might be nothing more than what could be termed "instantaneous laws", that is, laws with merely a single instance."[26]

I do not think that this proposal concerning what Allison calls instantaneous laws is sufficient to free his weak interpretation of the second analogy argument of the charge of being self-contradictory. Let us consider a concrete example: the unfolding over a certain period of time of a rosebud into a flower. There are just two alternatives that need to be considered. The first is that it would be possible to deduce from a statement of the relevant laws of physics and chemistry and (perhaps) of any specifically biological laws together with a suitable description of the bud's form, structure and physiological condition a law-like statement to the effect that the bud would, over a specified period of time, unfold into a flower. Let us call this the "reductionist" case. The alternative case is that no such deduction would be possible. Let us call this the "non-reductionist" case. Is there room in either of these cases for the conception of an instantaneous law?

The reductionist case is no different in principle from what is known to be true of the collisions that occur during a game of billiards. Here too there are certain relevant laws of nature – simply the relevant laws of physics in this case – from a statement of which together with a suitable description of the relevant initial conditions – in this case in regard to the positions, masses, velocities or accelerations of the billiard balls on the table and of the billiard cue as well as in regard to air resistance and the friction caused by the table's surface – a law-like statement would be deducible to the effect that the event in which we happen to be interested would occur – for example, that the red ball would go into the far right pocket. Now it is quite possible that the precise

[26] Ibid. p. 86.

initial conditions obtaining on the billiard table at any given time have never occurred before and will never occur again, so that the deducible law-like statement covering the given case does, as a matter of fact, cover a unique case. Nonetheless, it would be mistaken to say that the case instantiates an instantaneous law in Allison's sense. For, indirectly, at one step removed so to speak, the case is covered by the relevant laws of physics. The same would be true of the reductionist case regarding the rosebud: indirectly, at one step removed, the case would be covered by the relevant laws of physics, chemistry and (perhaps) biology. We do not have with this reductionist case an example of what Allison calls an instantaneous law.

Let us turn to the non-reductionist case. As Allison acknowledges "genuine laws require regularity and repeatability".[27] Without this there is no basis for our speaking of laws. But, *ex hypothesi*, there is no regularity in this case because this *kind* of case never – as a matter of fact – occurs again. How then can we be justified in speaking of a law at all? The regularity and repeatability would have to come from *other* cases, from other cases of buds unfolding into flowers. It might be supposed, for example, that botanists have discovered that the unfolding of buds in magnolias is in accordance with a law to the effect that if a bud has not unfolded before having grown to a certain size it will unfold if it reaches this size. This discovery warrants the hypothesis that a similar law applies to roses. Let us suppose that the hypothesis is correct – there is a critical size for bud-unfolding although what this size is is not known – but that with roses there are, under natural conditions, always other factors which induce bud-unfolding before the buds reach the critical size. There is a law but it has not yet been instantiated. Then, owing to some fluke in the weather, the law is instantiated – just once. We now do have an example of what Allison calls an instantaneous law – a law that in fact has only one instance.

Let us bring what has been said regarding this non-reductionist case of bud-unfolding to bear on Allison's weak interpretation of the second analogy argument. As we have seen, according to this interpretation event-perception presupposes (1) that "…there is some antecedent condition (presumably

[27] Ibid.

roughly contemporaneous with x's being in state A at t_1), which being given, state B necessarily ensues for this particular x at t_2", but that (2) it need not be the case in regard to *other* objects of x's type that, under antecedent conditions of the same kind, if these objects are in an A kind of state that they would then undergo a change to a B kind of state. By itself (1) is uncontroversial, but it appears to be incompatible with (2) and Allison's proposal regarding instantaneous laws is intended to show that there is not really any contradiction between (1) and (2). The trouble is that just as the instantaneous bud-unfolding law in the example implies that *were* a rosebud to reach a critical size then it *would* unfold – although in fact only one rosebud ever has reached the critical size – so also the instantaneous law that, according to Allison, is implicated in (2) would warrant analogous counter-factual conditionals regarding objects of x's type undergoing changes of state from type A to type B under certain antecedent conditions – conditions which, as it happens, are only realised on one occasion. Because of the evident parallel between the two cases the onus is still, I think, on Allison to show that the weak interpretation of the Second Analogy argument's conclusion that every event has a cause is not self-contradictory.

I conclude that the Second Analogy argument's conclusion that every event has a cause should be taken to imply that for every event in nature or in human life there is a covering law-like statement under which the event – suitably described – could be subsumed. On this interpretation of Kant's *a priori* principle of universal causality Kant's argument of the second analogy constitutes a comprehensive response to Hume's critique of any proposed rational justification of our attributions of causality. There is no gap, on this strong interpretation, between the Copernican turn in Kant's conception of causality that he speaks of in the Prolegomena and what he claims to have achieved via the second analogy argument. For if the latter is sound it vindicates the former. On the weak interpretation of Kant's *a priori* principle of universal causality, as established by the Second Analogy argument, things are less clear. On this interpretation, Allison concedes that Kant's Copernican response to Hume that he speaks of in the Prolegomena is not vindicated, or at

least not fully vindicated by what he claims to have achieved via the Second Analogy argument.[28]

Certainly, the strong interpretation of Kant's principle of universal causality is more in keeping with Kant's treatment of the third antinomy than is the weak interpretation. For on the strong interpretation every event is *pre*-determined in accordance with causal laws and it is this which, as Kant points out[29], gives the antithesis of the third antinomy its bite. On the weak interpretation, by contrast, some events may occur in accordance with causal laws which are instantiated only once, and on this supposition it is not clear whether in the case of such instantiations we should speak of *pre*-determination. For if a law is instantiated only once it might be argued that the law only comes into effect, so to speak, *upon* its being instantiated.

I think that the strong interpretation of Kant's transcendental principle of causality – the more straightforward interpretation – is more in keeping than is the weak interpretation with Kant's first Critique's having the well-integrated character that Kant aspires to. It does, I think, convey what Kant himself has in mind. Nonetheless, as Buchdahl points out[30], a ship may sail as well upstream as downstream, so Kant's own example does not at all suggest the determinism of the strong interpretation of Kant's transcendental principle of causality. But I would not go so far as to say, as Allison does, that this and the many other such examples like it support the weak interpretation of Kant's transcendental principle of causality.[31] For Kant's very purpose in giving the ship example might well be, I think, to emphasise that our most ordinary understanding of empirical matters necessarily involves attributing thereto a deterministic character. He must surely have been aware that if we cannot *but* think about empirical matters in this way then the thesis of determinism, instead of being, as it was for many of the men of the Enlightenment, a disturbing discovery[32], takes on what might be called a "homely" or "everyday" character.

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[28] Ibid. pp. 80-81 and p. 88. It would take us too far afield to pursue this question here.
[29] Prolegomena § 53, 4th paragraph. See also, A.C Ewing, A Short Commentary on Kant's Critique of Pure Reason p. 228.
[30] Buchdahl, (1969) op. cit. p. 650.
[31] Allison, (1983), op. cit. p. 231.
[32] See for example, N. Hampson The Enlightenment (1968) pp. 73-96.

4) Is Kant's Answer the Only Satisfactory Answer to His Question about Event-Perception?

I have tried to show why Kant holds that the only satisfactory answer to his question about event-perception is the answer he gives. It is because he holds that the only distinguishing characteristic of event-perception is its irreversibility and that the only way this can be achieved is if what is given to us through sensibility is subsumed under the schema of causality, viz. rule-governed succession. As he says when speaking of the ship sailing downstream:

> "My perception of its lower position follows upon the perception of its position higher up stream, and it is *impossible* that in the apprehension of this appearance the ship should first be perceived lower down in the stream and afterwards higher up. The order in which the perceptions succeed one another in apprehension is in this instance determined, and to this order apprehension is bound down."[33]

The impossibility that Kant speaks of here refers to the irreversibility inherent in event-perception. Such irreversibility Kant takes to be conspicuous by its absence from the house example, where, accordingly, no event is perceived.

Allison has pointed out that the second sentence just quoted is one among several others of the same tenor which have often been seriously misrepresented to mean that the subjective order of apprehension is causally determined by the successive order of the states perceived.[34] I suggest the following as a less misleading paraphrase of what Kant has in mind: the order in which certain items given to me through sensibility are to be thought – the order in which they are to be engaged with by the understanding – is in this instance necessary, and this order is constitutive of my apprehension of the event. This is in keeping with Allison's characterisation of what he calls "the irreversibility thesis":

> "… irreversibility does not refer to a given perceptual order, which we can inspect and then infer that it is somehow determined by the object; it refers rather to the conceptual order*ing* of the understanding (by subsumption under a rule) through which the understanding determines the thought of an object (in this case objective succession). Prior to the conceptual determination there is no thought of an object at all and, a fortiori, no experience."[35]

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[33] Critique of Pure Reason, B 237. The emphasis on "impossible" has been added.
[34] Allison, (1983) op. cit. pp. 224-225.
[35] Allison, (1983) op. cit. pp. 225-226.

It might perhaps be asked why Kant's question regarding event-perception could not be answered in a way that is much simpler than the transcendental answer proposed by Kant. Why could we not simply say that one perceives an event when there *is* an alteration in something and this change so affects one's cognitive faculties that one takes it to be the case that an alteration has occurred? Although there might be complications in the details, why might not this more straightforward suggestion about event-perception be essentially correct? How Kant would reply is implicit even in the brief outline of transcendental idealism given in part one of this chapter. His reply would be along the following lines. Things cannot be known as they are in themselves: "the house is not a thing in itself, but only an appearance, that is, a representation, the transcendental object of which is unknown."[36] And of course the same goes for the ship sailing downstream. It follows that whatever it is that we really *mean* by such words as "change", "alteration" and "event" can have nothing to do with how things are in themselves. (That the plain man and earlier philosophers have thought otherwise is a consequence of their not having thought about this very difficult matter at all or at least not thoroughly enough.) Such words as "change", "alteration" and "event" have therefore to be explicated without making any reference to how things are in themselves. For we cannot get outside, so to speak, either what is *given* to us through our faculty of sensibility or what we can *find* in our faculty of understanding.

When all is said and done though it is surely doubtful that Kant, purely on the strength of such an argument as schematic as the argument of the Second Analogy, could have established such a weighty conclusion as that every event has a cause. The presumption, surely, is that there is something wrong with the argument, and since Kant's answer to his own question about event-perception is at least *an* answer, the reasonable inference is that his is not the *only* satisfactory answer. That there is another answer to Kant's question about event-perception, and hence that his second analogy argument

[36] Critique of Pure Reason, B 236.

fails, is strongly supported by the findings of 20th century physics. For according to standard interpretations of quantum theory the clicks recorded by a Geiger counter are events only whose *probabilities* of occurrence could have been theoretically predicted beforehand. We can hear these events loud and clear yet according to the standard interpretation of quantum theory they cannot be said to have been caused without serious qualification, if indeed they can be said to be caused at all.[37] This strongly suggests that there must be another answer to Kant's question about event-perception than the answer he himself gives, though it gives no clue as to what this other answer might be.[38]

Kant, as has already been pointed out, maintains that the critical difference between his example of our looking at a house whilst scanning it with our eyes from top to bottom or from left to right and his example of our looking at a ship sailing downstream is that there is something irreversible associated with the latter but not with the former. Thus far Kant is surely correct. But, as I now hope to show, there is another way of interpreting this „irreversibility' than that envisaged by Kant.

In the third of a series of lectures given by C.S Peirce is 1898 he writes the following:

> "[Consider what] we experience when our will meets resistance, or when something obtrudes itself upon sense. Imagine a magenta color to feel itself and nothing else. Now while it slumbers in its magenta-ness let it suddenly be metamorphosed into pea green. Its experience at the moment of transformation will be secondness."[39]

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[37] Lewis White Beck attempts to reconcile this consideration with a somewhat qualified interpretation of Kant's principle of causality: "…there are good epistemological grounds for regarding our knowledge of indeterminacy as parasitic upon our knowledge of causal determinacy." See Beck, L.W., "The Second Analogy and the Principle of Indeterminacy", in Penelham, T. and MacIntosh, J.J. eds., The First Critique (1969) p. 95.

[38] S. Körner has argued that the second analogy argument is incompatible with the theory of relativity because of Kant's "assumption that an objective sequence of appearances is the same for every observer, and consequently that appearances which are simultaneous for one observer are also simultaneous for every other observer", which assumption has been dropped in the theory of relativity. I think that Körner is mistaken about this. Kant does not make the above assumption – at least in his second analogy argument. For this argument is, as Allison has emphasised, concerned not with the perception of sequences of events but with the perception of single events. See S. Körner, Kant (1955) p. 87.

[39] Peirce, C.S., Reasoning and the Logic of Things, ed. Ketner, K.L., (1992) p. 148. The quoted passage is a partial explication of the second of Peirce's metaphysical categories, the others being named Firstness (see chapter three) and Thirdness (see chapter eight.) Peirce gives a succinct account of his three categories at pages 146-150. In the passage quoted Peirce speaks of a magenta color feeling itself. This sounds very odd and suggests a reductive „no-self' view of the self such as is suggested by Hume in his Treatise. But those who, like Kant, reject such a view may, without seriously distorting Peirce's thought, simply imagine *our* experiencing magenta and nothing else.

My purpose in quoting this passage is firstly to show that we can have direct, i.e. completely unmediated, experience of the fact that a change in what we are experiencing has been *imposed* upon us. With Peirce's example we can just „see' that there has been an event – namely, a change from magenta to pea green. We can just *tell* – straight off – that some changes in what is given to us through sensibility are self-produced – as with Kant's example of looking at a house – and that other such changes are imposed upon us: given our sensibility we cannot *but* experience them. Furthermore, with some (though by no means all of course[40]) of the changes that are imposed upon us we can tell that our understanding has nothing whatsoever to do: as with Peirce's example. I hold that what Peirce is getting at is of the utmost importance for gaining a better understanding of our cognitive powers. My second reason for quoting the above passage is simply to acknowledge that, as far as I know, Peirce was the first to identify something of the part played by what he calls Secondness in our mental life.

That we can sometimes just see that an event is occurring is raised as an objection to Kant's argument of the Second Analogy by A.O. Lovejoy. Lovejoy concludes that "There is therefore no occasion for appealing to anything so remote from immediate experience as the Principle of Sufficient Reason" in distinguishing events from non-events.[41] The same point has been made by Jeffrey Murphy.[42]

I suggest, then, that Kant has misattributed the source of the irreversibility that he speaks of in connection with event perception. There is, as Kant insists, an element of necessity involved but, typically, it pertains to the fact that what is offered to us through sensibility *forces* us to accept that there has been, or is now occurring, a change. This I think is much more in keeping with our experience of perceiving events than is Kant's account. It might be said that my proposal applies to such cases of event perception as the sudden realisation that one has a bad tooth-ache no less than to cases where

[40] The example of having our name quietly spoken by someone in our vicinity despite the presence of much background noise is an interesting example of this.
[41] Lovejoy, A.O., "On Kant's Reply to Hume" (1906): 380-407. Reprinted in Gram M.S. ed. Kant: Disputed Questions, (1967) pp. 284-308.
[42] See J. Murphy, "Kant's Second Analogy as an Answer to Hume", in Ratio II (1969) pp. 75-8.

the event perceived is something publicly observable – as with a ship sailing downstream. This is true. But the same is true so far as I can judge of the perceived events covered by Kant's argument of the Second Analogy. This raises questions. To pursue them here though would entail too big a diversion from our main line of enquiry.

There are, though, two questions that do need to be addressed in regard to the proposal that, typically, we can just *see* that, or *tell* that, an event has occurred without our ‚presupposing' that the event-constituting change from how things were to how things are now is governed by any rule. Firstly, do we have to abandon completely Kant's thesis that event perception requires the application of the understanding to what we receive through sensibility? Certainly, I would maintain that a very young child looking at a ship sailing downstream could see perfectly well that an event has occurred. She might not know anything at all about ships, rivers or currents etc. but nonetheless she could see that *something* – she may not know what – has happened. The involvement of her understanding is minimal: perhaps even non-existent. Her seeing an event here does not require her to understand anything, although her understanding of things has increased somewhat as a result of what she has seen. Such, I take it, are the facts. We might render them in Kantian terms as follows: we cannot tell that an event has occurred just from *what* is at any given moment available to us through sensibility, but we often can do so just from how we are *affected* by what is available to us. It does not follow from this that the understanding has no role in event perception. It only follows that its role is different from what Kant envisages. We know on empirical grounds that in the same situation one person may perceive an event that someone else does not perceive, and we know that such differences in event perception are attributable in part to differences amongst people in what they know and understand. As to whether this kind of connection between what we know and what we perceive is a *necessary* feature of any cognitive life is an important question although not one to be pursued here.

The other question concerns whether the proposal defended here is compatible with Kant's transcendental idealism. In the preface to the second edition of the Critique Kant states that "we can… have no knowledge of any object as thing in itself, but only insofar as it is an object of sensible intuition,

that is, an appearance…"[43] But he adds: "…we must yet be in a position to *think* them as things in themselves, otherwise we should be landed in the absurd conclusion that there can be appearance without anything that appears."[44] With the latter remark Kant comes close to acknowledging that things in themselves *affect* us through our sensibility. For that which appears to us has to affect us in order to do so.[45] And in his proof of the Anticipations of Perception he comes even closer to doing so: speaking of appearances he says that, "they contain… the real of sensation as merely subjective representation, which gives us only the consciousness that the subject is *affected*, and which we relate to an object in general."[46] Naturally, Kant does not *want* to say that our sensibility is affected by things in themselves because to say this is incompatible with his thesis that all our attributions of causality involve our subsuming what is given to us through sensibility under the category of causality – whose scope does not extend to things in themselves.

I believe that so far from being an embarrassment for Kant an acknowledgment that things in themselves affect us is precisely what is needed if we are to do justice to the transcendental idealist perspective on the world. Yes, things-in-themselves affect us – and to differing degrees at different times – but that is *all* the transcendental idealist need admit he or she knows about them. This is not the thin end of the wedge. Yes, the causality hereby acknowledged cannot be the same as the category-based causality that applies only to things-as-they-appear-to-us. But this only involves a contradiction if it is maintained that all attributions of causality are *ipso facto* category-based. And why should the transcendental idealist maintain this? Only, I think, a desire for conceptual parsimony. We have only to broaden the conceptual basis of transcendental idealism so as to allow for a kind of non-category based causality and the would-be contradiction vanishes. My proposal regarding the irreversibility associated with event-perception is in

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[43] Critique of Pure Reason, B XXXVI, op. cit. p. 27
[44] Ibid. B XXXVII
[45] In his paper „Appearing and Appearances in Kant' S.F. Barker asks "How are we to explain why Kant felt so confident that there are things in themselves distinct from appearances?" and in search of an answer he cites the latter part of the second of Kant's remarks quoted above. Surprisingly, he does not consider the question of our being *affected* by things in themselves. See S. Barker, „Appearing and Appearances in Kant' in Kant Studies Today, ed. Beck, L.W. (1969) pp. 285-6.
[46] Critique of Pure Reason, B208 (emphasis added.)

keeping with transcendental idealism so understood as to allow for what we might call the ‚brute' or ‚impositional' causality of things-in-themselves, i.e. for their affecting our faculty of sensibility without this involving the category of causality, let alone its schema – of rule-governed succession. The proposal is entirely in keeping with everyday experience. We cannot but be ‚struck', for example, when the frogs by the pond to whose croaking we have become habituated suddenly stop croaking, and, though generally to a lesser degree, this ‚being struck by' is, upon reflection, evident whenever we perceive an event.

I conclude that Kant's answer to his question about the irreversibility associated with event-perception is not the only answer and that there is another (and better) answer. This means that although Kant's second analogy argument goes far towards opening up the elemental question of what it is to perceive an event it fails in its purpose of vindicating his Copernican response to Hume. For the alternative proposal defended here does not imply that all events are caused by antecedent events, and indeed (so far as I can see) has no implications at all for Hume's critique of the supposed rational basis of our attributions of causality.

5) An Alternative Attempt to Vindicate Kant's Copernican Response to Hume

As Paul Guyer emphasises,[47] Hume addresses three questions about causality in his Treatise[48], and if we are properly to understand Kant's Copernican response to Hume then we need to identify which of these questions Kant's argument of the Second Analogy is meant to provide an answer to. The first question concerns the very idea of causation: "To begin regularly we must consider the *idea* of causation, and see from what origin it is deriv'd."[49] The second question is: "for what reason we pronounce it *necessary*, that every thing whose existence has a beginning, shou'd also have a cause?" And the third question is: "why we conclude, that such particular causes must *necessarily* have such particular effects; and what is the nature of

[47] Guyer, P. Knowledge, Reason and Taste: Kant's Response to Hume (2008)
[48] Hume, Treatise, op. cit.
[49] Ibid., p. 53.

that *inference* we draw from the one to the other, and of the *belief* we repose in it.[50]

I think it is evident that Kant's argument of the Second Analogy would, if it were correct, provide an answer to the first and second of Hume's questions but not to Hume's third question. If, as Kant claims, event perception requires the subsumption of what is given to us through sensibility under the schematised category of rule-governed succession then this would explain why we hold it to be necessary that every change has a cause, and in so doing it would also identify the source of the idea of causality. But Kant's claim throws no light on Hume's third question – about the rational basis of our beliefs about particular causal connections. Paul Guyer goes so far as to say that Kant's argument of the Second Analogy presupposes that there is a satisfactory answer to Hume's third question:

> "…in spite of the fact that we can always alter the sequence of the representations of the position of a ship sailing downstream in imagination, we nevertheless know that it must have been sailing downstream because particular causal laws of nature tell us that under the prevailing conditions of wind, current, and so on, it could have done nothing else. So Kant's argument for the general principle of causality presupposes the availability of particular causal laws."[51]

This, I hold, is mistaken. As far as Kant's argument of the Second Analogy is concerned his ship example could as well be replaced by the example of one's perceiving a flash of light on a dark night. Indeed, this latter would have been a better example precisely because with it we are less at risk of being diverted from Kant's transcendental idealist perspective through being drawn into thinking about water and currents and wind direction, etc. – matters which are utterly irrelevant to Kant's argument. Nonetheless, Guyer is right in bringing to our attention the fact that Kant's Second Analogy argument does not even address Hume's third question.

Hume himself thought that it is by addressing his third question – concerning our understanding of particular causal connections – that we are most likely to be able to make progress in our understanding of causality. For

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[50] Ibid., p. 55.

[51] Guyer, op. cit. p. 113. Earlier, on page 107, Guyer says that "…the argument of the Second "Analogy" seems to presuppose that particular causal laws are available to us for the general purpose of ordering states of affairs in time."

after addressing his first question – about the very idea of causation – and failing to find amongst our impressions anything from which our idea of a necessary connection between events could be derived he decides "…to leave the direct survey of this question concerning the nature of that necessary connection… and endeavour to find some other questions, the examination of which will perhaps afford a hint, that may serve to clear up the present difficulty."[52] And after addressing his second question – about our grounds for believing that every event has a cause – with a similar lack of success he says that "…it will be more convenient to sink this question in the following, *why we conclude, that such particular causes must necessarily have such particular effects, and why we form an inference from one to another?*[53] I think that it would be a good idea here to follow Hume's advice. Let us therefore sink Hume's first two questions in his third question.

At the heart of Hume's third question is the problem of induction. To assume, as we do, that "…the future will be conformable to the past" cannot be justified by any logical deduction because any relevant premises would themselves have to presuppose that the future will be conformable to the past, and to try to justify our assumption by appealing to the fact that up until *now* the assumption has stood us in good stead would also beg the question.[54] So, the principle on which we rely to build up our empirical knowledge has no evident justification.[55] This, essentially, is the problem. Our question now is: is what we might call a Copernican response – on analogy with Kant's Copernican revolution – the correct response to the problem?

In his second analogy argument Kant seeks to vindicate his Copernican response to Hume by trying to show that without our attributing causal connections to what is given to us through sensibility we could have no experience of events. I have argued that in this endeavour he fails. An attempt shall now be made to vindicate Kant's Copernican Response to Hume in

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[52] Hume, op. cit. p. 55.
[53] Ibid., p. 58. Hume's idea of „sinking' – as he puts it – one philosophical question in another is of considerable interest. We have here a valuable philosophical heuristic.
[54] Hume, Enquiry, Section 4, p. 25.
[55] As Guyer observes, the question of induction looms larger in Hume's Enquiry, which Kant had read before writing his Critique, than in Hume's Treatise, which Kant had probably not read. Hume's first two questions listed above are discussed only in the Treatise. However, none of this has any bearing on the fact that Kant's Second Analogy argument addresses Hume's first and second questions only.

another way. I believe that Kant's Copernican response to Hume is essentially correct. But I also believe that this is one of those things that is so fundamental – or perhaps "elemental" puts it better – that it can scarcely be argued for: one can only present considerations in favour of its acceptance in the hope that its essential correctness will be „seen'.

The task before us is to think away that without which we could not think at all, that without which we would think nothing at all, that without which it would make no sense even to speak of understanding – except to deny the concept's applicability. What is to be thought away is the very *idea* of causality as applied to what we experience. To this end it may help to start by considering as rudimentary a kind of intelligence as one can (though this is not really necessary and here I shall start from our normal everyday kind of experiences.) I experience this table as something solid, with an unchanging size and with many other properties. This would not be possible unless I had at least a tacit „hands on' understanding of causality. Any description of or statement about the table presupposes that we are speaking of something that can and does interact with all kinds of different things in all kinds of different ways, its interactions thereby evincing its diverse properties or attributes, and to speak of interactions, of properties or of attributes is to presuppose causality. And what is true of our experience of the table is obviously true too of our experience of everything beyond immediate sensation.[56] What is, I maintain, evident upon reflection is that were we without any cognitive grasp of any causal relation at all our experience, if to speak of it still makes sense, would have nothing *cognitive* about it at all. Without at least a rudimentary understanding of causality nothing would make any sense to us – if indeed the use of the first person plural here makes any sense either. A certain *propensity*, the propensity to attribute causal powers to things is a *sine qua non* of our experience having anything cognitive about it.

A similar point is made by Strawson. It is encapsulated in the following passage from his The Bounds of Sense.

> "…in contradistinction to concepts of simple sensory *qualities*, and in contradistinction, too, to any concepts there may be of particular sensory

[56] Whether it is true of immediate sensation also, as I believe, is an interesting question that shall not be pursued here.

> *items* which are quite fully describable in terms of simple sensory qualities ("sense-data", perhaps, in one sense of the term), concepts of *objects* are always and necessarily compendia of causal law or law-likeness, carry implications of causal power or dependence. Powers, as Locke remarked – and under "powers" he included passive liabilities, and dispositions generally – make up a great part of our idea of substances. More generally, they must make up a great part of our concepts of any persisting and re-identifiable objective items. And without some such concepts as these, no experience of an objective world is possible."[57]

The main difference between what Strawson is claiming and what I am suggesting is that Strawson draws a conclusion about the cognitive prerequisites of experiencing an *objective world* whereas I am prescinding from this issue and an instead merely concerned with what is prerequisite for having any *understanding* of anything at all.[58]

The foregoing does not, so far as I can see, show that having an *inductive* propensity is a *sine qua non* of having experience with something cognitive about it. On the face of it there is nothing incoherent in our imagining ourselves as having instinctive knowledge, i.e. knowledge of empirical matters without our having acquired this knowledge through experience, and this would involve our attributing causal powers to things without our having previously has any experience *of* these things and hence *a* fortiori without our having to rely on any inductive propensity that could be exercised in regard to these things. Such is presumably the case with many animals.

The foregoing considerations show, I believe, that there is a sort of absurdity involved in the idea of *justifying* induction. For unless we practised induction, that is to say, unless we learned causal connections from experience, we would not understand what it *means* to justify anything. Asking for a justification for exercising our inductive propensity is tantamount to asking for a justification for using our intelligence.

None of this impugns Hume's main claims about causality and induction. There is a sense in which behind our every act or thought there lies a sort of hope or trust that the past and present will continue to be a guide to

[57] Strawson, (1966) op. cit. pp. 145-6.
[58] For this the ability to re-identify numerically identical items is not, I would maintain, necessary. But the ability to re-identify qualitatively identical items, and to respond in relevantly similar ways to relevantly similar items, is necessary.

the future and hence that causality will continue to be in play and in ways with we have already had experience of.

The valuable insight in Kant's Copernican response to Hume may, I take it, be encapsulated as follows: without attributing causal connections between things there would *be* no cognitive experience – such attributions make cognitive experience possible. The broad picture sketched above is intended to convey this insight correctly. If the picture is accepted as essentially correct then it serves to vindicate Kant's Copernican turn upon his being awoken by Hume from his dogmatic slumber.[59]

[59] In his Knowledge, Reason and Taste Guyer argues that much of Kant's moral philosophy and of what he says in his Critique of Judgment can also be understood as responses to Hume. Guyer fully acknowledges that Kant's philosophy can *also* be understood as involving responses to many other thinkers, for example, to Descartes, Leibniz, Wolff, Baumgarten, Crusius, Mendelsshon, Locke and Berkeley in metaphysics and epistemology, to the ancient Stoics, Epicureans, Montaigne, Hobbes, Mandeville, Shaftesbury and Hutcheson in moral philosophy, and to Meier, Lessing, Herder, Burke and Gerard in aesthetics. Guyer also rebuts the claims made in two recent works (one by Garry Hatfield the other by Eric Watkins) that Kant's philosophy should not be seen as especially related to that of Hume. See Hatfield, G., "The Prolegomena and the Critiques of Pure Reason" in Kant und die Berliner Aufklärung: Akten des IX. Internationalen Kant-Kongresses, eds. Gerhardt, V., Horstmann, R., and Schumacher, R., 1: 185-208 (2001) and Watkins, E., Kant and the Metaphysics of Causality (2005).

Chapter Two

The First Analogy

Kant states the Principle of the Permanence of Substance in two ways. In the first edition of the Critique of Pure Reason he states it as follows:

> "All appearances contain the permanent (substance) as the object itself, and the transitory as its mere determination, that is, as a way in which the object exists."

In the second edition he is more succinct:

> "In all change of appearances substance is permanent; its quantum in nature is neither increased nor diminished."[60]

The great majority of commentators take it that the two statements come down to the same thing. I agree with this but because the focus in this chapter is on the argument of the First Analogy given by Kant as a proof of the Principle of Permanence of Substance in the first paragraph of the Critique's second edition, it is rather the second statement of the principle that should here be kept in mind.

This chapter is in four parts. Part one presents what I take to be counter-examples to Kant's Principle of the Permanence of Substance. If indeed they are counter-examples then they show that there must be something wrong with Kant's argument of the First Analogy, although they do not show *where* Kant's argument goes wrong. Kant's argument is examined in part two, and by referring back to one of the examples already cited an attempt is made to show precisely where Kant draws a faulty inference. Part three corresponds roughly with part five of the previous chapter. Again, a qualified form of Kant's „Copernican Revolution' is defended. Finally, in part four, a qualified form of Kant's general thesis that the understanding is necessarily involved in the perception of change is defended. Furthermore, Kant's fundamental idea that understanding is constituted by what he calls "synthesis" is illustrated and vindicated.

[60] Critique of Pure Reason, p. 212.

1) Counter-examples to the Principle of the Permanence of Substance

In his paper „Kant on the Perception of Time' W.H Walsh acknowledges a misgiving over the fact that Kant's principle of the Permanence of Substance appears to be incompatible with a theory in cosmology to the effect that matter is continually being created.[61] This is the steady state theory of Bondi, Gold and Hoyle, first put forward in 1948, which proposes that the expansion of the universe is,

> "…caused by the continuous creation of new matter so that the average density and appearance of the universe remain the same at all times."[62]

Walsh notes that although the theory is not universally accepted it is treated seriously by cosmologists, "…which would hardly be likely if there were some a priori objection to it."[63] (This was in 1969. The theory is now generally rejected, though only on empirical grounds.) Walsh, who himself defends Kant's principle, sees defenders of Kant as having only two options: they might claim "that the continuous creation of matter is not the continuous creation of substance in the sense Kant intends", to which Walsh rightly notes "that it looks uncommonly like it"; or else they might claim that those who propound the theory have simply failed to see that their theory is ruled out *a priori*, and he admits to feeling "an awkwardness in supposing that men as intelligent as these" could fail to see that this is so if indeed it is so. Jonathon Bennett also mentions the steady state theory but appears to take its philosophical importance less seriously. He says that:

> "Most of us find it natural to assume that any change is a transformation of some basic stuff which is there all the time: once it was thought to be matter, more recently it has been thought to be energy one of whose forms is matter. The hypothesis of some cosmologists that matter continually comes into existence *ex nihilo* startles the layman precisely because it seems to challenge this assumption."[64]

In most studies of Kant's First Analogy argument the fact that some cosmologists have endorsed a theory that seems to be incompatible with Kant's Principle of the Permanence of Substance is not mentioned. But since

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[61] Walsh, W.H., „Kant on the Perception of Time', in Beck, L.W. ed. Kant Studies Today (1969), p. 169.
[62] Yule, J. ed. Concise Encyclopedia of Science and Technology (1978) p. 147.
[63] Walsh, (1969) op. cit.
[64] Bennett, J., Kant's Analytic (1966) p. 183.

Kant's argument is supposed to show something about how all human beings have necessarily to conceive of the world, facts about how people actually *do* conceive of the world, as well as about how they *have* conceived of it, are very relevant considerations. Although Strawson does not mention the steady state theory he does emphasise something even more significant:

> "The pre-scientifically-minded person is quite able to see or think of something's going up in smoke or being reduced to ashes without in any way supposing that anything quantitatively identical persists throughout the transaction. If we are really dealing with a category, then we are dealing with a concept which anyone capable of objective experience *must*, at least implicitly, apply; but the doctrine of implicit application would be quite unplausible (sic) in this case."[65]

This, I think, is perfectly correct. In his First Analogy argument Kant argues that a necessary precondition of our being able to perceive any objective change, and hence correlatively any non-change, is that the schematised category of substance, i.e. permanence of the real in time[66], be applied to whatever is given to us through sensibility. In other words, our experience at the time must be informed by the understanding that what we have experience of is an alteration, or, correlatively, a lack of any alteration, in an eternal substance, i.e. something that never itself undergoes any increase or decrease in its quantity. But of course, pre-scientifically minded people are perfectly well able to perceive objective changes, yet, as Strawson says, they do not think – whether implicitly or explicitly – of these changes as being mere alterations in something sempiternal. Kant's argument seems to be incompatible with plain facts – facts, that is, about how (some) people actually conceive of the world.

A couple of examples from fairytales may help to bring out the seriousness of what is at issue here. In *Cinderella* the fairy godmother turns a rat, a pumpkin and six mice into a coachman, coach and six horses. The word "turns" here is noteworthy: it shows that the changes spoken of here are not alterations but transmogrifications. It is interesting to compare the magic of *Cinderella* with the more extreme magic of *Aladdin* in *The Arabian Nights*. Whereas the fairy godmother required Cinderella to fetch her a rat, six mice and a pumpkin before she could work her magic, the genie of the lamp was not

[65] Strawson, op. cit. pp. 131-2.
[66] Critique of Pure Reason, B183.

similarly constrained: he brought a palace into existence out of nothing. The genie's magic is not even compatible with the philosophical idea that nothing comes from nothing whereas the fairy godmother's magic is. The magic of neither is compatible with Kant's Principle of the Permanence of Substance. *Were* the world of a piece with either of these fairytales we would be perfectly well able to observe the magical changes they describe – the tales are not, as some science fiction stories are, incoherent.

Children who believe in magic do not, as they grow older, come to abandon this belief as a result of their experiencing an *a priori* insight into the prerequisites of event perception. They simply need to have had more experience of what the world is like. Such examples indicate that there is something mistaken about Kant's argument of the First Analogy. The question is, what? In part two this question is addressed.

2) Kant's Argument of the First Analogy in Seven Steps

Kant's argument of the First Analogy as given in the first paragraph of the Critique's second edition,[67] and numbering the seven steps identified by Henry Allison,[68] is as follows.

> (1) All appearances are in time; and in it alone as substratum (as permanent form of inner intuition), can either coexistence or succession be represented. (2) Thus the time in which all change of appearances has to be thought, remains and does not change. For it is that in which, and as determinations of which, succession or coexistence can alone be represented. (3) Now time cannot by itself be perceived. (4) Consequently there must be found in the objects of perception, that is, in the appearances, the substratum which represents time in general; and all change or coexistence must, in being apprehended be perceived in this substratum, and through relation of the appearances to it. (5) But the substratum of all that is real, that is, of all that belongs to the existence of things, is *substance*; and all that belongs to existence can be thought only as determinations of substance. (6) Consequently the permanent, in relation to which alone all time relations of appearances can be determined, is substance in the [field of] appearance, that is, the real in appearance, and as the substrate of all change remains ever the same. (7) And as it is thus unchangeable in its existence, its quantity in nature can be neither increased nor diminished.

Let us examine each of these seven steps in turn.

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[67] Critique of Pure Reason op. cit. p. 213.
[68] Allison, (1983) op. cit. pp. 200-201.

> Step One: All appearances are in time; and in it alone as substratum (as permanent form of inner intuition), can either coexistence or succession be represented.

Allison[69] offers the following paraphrase of step one: "…in general the representation of time must be presupposed in order to represent either coexistence or succession," explaining that "…by „representation of time' must here be understood time as form of intuition (the indeterminate pure intuition), not formal (determinate) intuition." Allison speaks here of what, according to Kant, our representation of coexistence or succession presupposes. On the face of it though, to say that our representation of change *presupposes* the representation of time is incorrect; for in the complete *absence* of any change there would surely *be* no time, so that to say that change presupposes time is logically absurd. But this is to forget about the transcendental idealism which frames Kant's argument. Time, understood only as the form of inner intuition (indeterminate inner intuition in Allison's sense) does not involve any cognitive experience of time (determinate inner intuition in Allison's sense) because this requires work to be done by the understanding *on* the offerings of this intuition. By itself the form of pure inner intuition is merely that which is necessary for the cognition of time apart from that which comes from the understanding, the two contributions together being jointly sufficient for the cognition of time, i.e. of a determinate inner intuition in Allison's sense. When Kant speaks of time as something in itself, as a sort of substratum in which changes occur, he is therefore speaking of what Allison calls the "indeterminate" inner intuition.

> Step Two: Thus the time in which all change of appearances has to be thought remains and does not change. For it is that in which, and as determinations of which, succession or coexistence can alone be represented.

Given that, from step one, our every representation of change is an imprint in, and hence a determination of, the substratum of time as the inner form of intuition, this substratum must itself be unchanging. For we can only represent change against a backdrop which does not itself change. This is the reasoning of step two made a little more explicit. It is true that if step two is reduced to

[69] Ibid.

the bald statement, "Time does not change", then it falls prey to the objection that it makes no sense to say of time either that it changes *or* that it does not change.[70] But, as Allison points out[71], this "is largely irrelevant as a criticism of Kant." Indeed, the accusation is wholly irrelevant, for it wholly disregards the fact that this second step of Kant's argument, like the first, presupposes Kant's transcendental idealism. Specifically, it presupposes that our representations of change are grounded in time conceived as a substratum, viz. the inner form of intuition.

> Step Three: Now time cannot by itself be perceived.

This too has to be understood within the context of Kant's transcendental idealism, according to which time is, as step one has made clear, a sort of substratum, the imprints in which – its determinations – constitute, given the requisite work of the understanding, the changes which we experience. We can ‚think' of this substratum in that we can think of time passing in the absence of any sensible change. But we cannot perceive (experience) this substratum.

In steps one and two Kant speaks only of how, for the human mind, change is *represented*. He argues that change can only be represented in an unchanging substratum, namely, time as the form of inner intuition. In step three – and hereafter – Kant no longer speaks just of the representation of change but of our actual *perception* (experience) of change. For this the substratum of time as the inner form of intuition is, Kant maintains, a necessary condition. But it is not a sufficient condition, Kant maintains, simply because the substrate of time cannot itself be perceived.

> Step Four: Consequently there must be found in the objects of perception, that is, in the appearances, the substratum which represents time in general; and all change or coexistence must, in being apprehended, be perceived in this substratum, and through relation of the appearances to it.

Kant describes the model for time in general that is implied by steps one, two and three in two ways. He speaks of "the substratum which

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[70] This objection is made by Robert Wolff in Wolff, R.P., Kant's Theory of Mental Activity (1963) p. 251.
[71] Allison (1983), op. cit. p. 202.

represents time in general" and says that "all change or coexistence must, in being apprehended, be perceived *in* this substratum," but he also says of this substratum that "all change or coexistence must, in being apprehended, be perceived… *through relation of the appearances to it*." The words italicised mark a crucial distinction. To say that all change must be perceived in a substratum means something different from saying that all change must be perceived through relation of the appearances to it, the former being much more specific. The former implies the latter, for if the appearances we perceive are *in* a substratum, i.e. if they are different determinations *of* the substratum, then it follows that they are *related* to the substratum; but the latter does not imply the former, for if the appearances we perceive are merely related to a substratum then it does not follow that they are *in* the substratum in the sense of being different determinations *of* it. Kant is intent on proving that the changes – and non-changes – that we perceive are nothing other than determinations of something that is permanent, i.e. of substance, and for this it is not sufficient that the changes and non-changes that we perceive be merely *related* in some way or other to something that is permanent.

In his exegesis and examination of step four Allison identifies what he calls the *Backdrop Thesis*, namely, the thesis that,

> "…an enduring perceivable object (or objects) is required to provide the backdrop or frame of reference by means of which the succession, coexistence, and duration of appearances in a common time can be determined."[72]

Since Allison defines the backdrop as that merely *by means of which* the succession, coexistence and duration of appearances in a common time can be determined he has left it open as to whether these appearances are different determinations *of* the backdrop or whether they are merely *related* to it – by way of contrast, presumably, as a figure is related to its ground. This Backdrop Thesis captures a valuable idea, which will be developed in part four.

What Kant says in step four is confusing because he says in effect that the required model for time in general is both a substratum whose various determinations (i.e. modifications) *constitute* the changes and coexistences

[72] Allison, (1983) op. cit. p.203. Contrary to what is argued here, Allison takes step four to assert nothing over and above the Backdrop Thesis.

that we perceive *and* a backdrop against which the changes and coexistences that we perceive stand out. For he speaks as if he were further qualifying his initial reference to a substratum by speaking of it also as a backdrop, whereas in speaking of it as a backdrop he adds nothing whatsoever to what he has already said. In steps one, two and three nothing has been said to imply, or even to suggest, that the model for time spoken of in step four must be a substratum as distinct from merely a backdrop. Step four is therefore a non sequitur.

> Step Five: But the substratum of all that is real, that is, of all that belongs to the existence of things, is *substance*, and all that belongs to existence can be thought only as a determination of substance.

It would seem from the wording of step five that Kant does not realise that at step four he had in effect already asserted that all that belongs to existence, all changes and coexistences, can be thought only as a determination of substance. In any case he asserts it now, and it certainly does not follow from the Backdrop Thesis alone. Irrespective of whether my exegesis of step four is correct and hence whether this step is a non sequitur, Kant now needs an argument to show that every change that we perceive or might perceive is an alteration in something, something that does not itself change. Kant provides such an argument but only near the end of his coverage of the First Analogy – at A188/B231.

> "Alteration can therefore be perceived only in substances. A coming to be or ceasing to be that is not simply a determination of the permanent but is absolute, can never be a possible perception. For this permanent is what alone makes possible the representation of the transition from one state to another, and from not-being to being. These transitions can be empirically known only as changing determinations of that which is permanent. If we assume that something absolutely begins to be, we must have a point of time in which it was not. But to what are we to attach this point, if not to that which already exists? For a preceding empty time is not an object of perception. But if we connect the coming to be with things which previously existed, and which persist in existence up to the moment of this coming to be, this latter must be simply a determination of what is permanent in that which precedes it. Similarly also with ceasing to be; it presupposes the empirical representation of a time in which an appearance no longer exists."[73]

This argument turns on the point that although according to the Transcendental Aesthetic we can *imagine* an empty time (A31/B46) an empty time is not *perceivable*. But, as Paul Guyer notes,[74]

[73] Critique of Pure Reason, op. cit. p. 217.
[74] Guyer, op. cit. p. 148.

> "…why cannot we perceive that a change has taken place simply by observing a different state of affairs at one moment than we observed before, without the latter state being an altered property of the same object that was in a different state in the earlier moment?"

After noting that Kant does not seem to have provided any explanation of why not, Guyer proposes the following explanation. Unless we conceive of any given change as an alteration in the condition of that which endures we would not be able to distinguish between our perceiving a *change*, e.g. from black to red, and the occurrence of a change in what we are *perceiving*, e.g. after seeing something black we see something red.[75] Developing a suggestion by D.P Dryer,[76] Allison notes the relevance of this consideration in his Kant's Transcendental Idealism.[77]

I do not find the above consideration convincing. When Aladdin sees a beautiful palace come into existence where a moment before there had been but grass and a few bushes he perceives perfectly well that there has been a change, and not just because he had asked the genie of the lamp to give him a palace and he has seen the genie, whom he knows is obedient, make a gesture in the direction where the palace materialises. He perceives a stupendous change. He can do so because the palace materialises at the same *place* as where a moment before there had been nothing but grass and a few bushes. But might not one, even here, say that the creation of the palace *ex nihilo* is still only an *alteration* – in that it is an alteration in what is to be found at a particular *place*? The answer is no, because to say this would be merely playing with words. Whatever else may be said about space – and it is not an easy subject to speak about – to say that it is a substance would be to stretch the extension of the word "substance" in an exceedingly misleading way.[78]

There is a further consideration. It has to do with the last of the arguments Kant gives in his coverage of the First Analogy, an argument which follows on immediately after the one quoted above.

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[75] Paul Guyer gives a full coverage of this proposal in Guyer, P. Kant and the Claims of Knowledge (1987) pp. 224-230. See also A. Melnick, Kant's Analogies of Experience (1973) pp. 71-7.
[76] D. Dryer, Kant's Solution for Verification in Metaphysics (1966) pp. 353-9.
[77] Allison, (1983) op. cit. p. 206.
[78] It should be noted, however, that some philosophers *do* regard space-time as a substance.

> "If… substances could come into being and others cease to be, the one condition of the empirical unity of time would be removed. The appearances would then relate to two different times, and existence would flow in two parallel streams – which is absurd. There is only one time in which all different times must be located not as coexistent but as succession to one another."[79]

For the following reason this argument is not convincing. We could always assign dates to any materialisations of the genie of the lamp sort, their dates being assigned to a single time scale, because we could relate them to the ordinary changes going on at *other* places. And since however many places there are we are bound to consider their *sum* as constituting, whether partly or wholly, just *one* place, so we are bound also to consider any *changes* going on at these places as events in a *single* time series. The same applies to any absolute perishing – from existence to non-existence.

Therefore, Kant has not shown how step five, which claims that all change and coexistence can be thought of only as a determination of substance, follows from the Backdrop Thesis of step four.

> Step Six: Consequently the permanent, in relation to which alone all time relations of appearances can be determined, is substance in the [field of] appearance, that is, the real in appearance, and as the substrate of all change remains ever the same.

It is at this point that most commentators think that Kant's argument fails.[80] At most Kant has proved the need, in order for us to perceive change, for what Jonathon Bennett calls substances$_1$, i.e. things which have qualities, such as animals, plants, people, machines, lakes, etc: he has not proved that there is any need for what Bennett calls substance$_2$, i.e. "something which can be neither originated not annihilated by any natural process, i.e. which is, barring miracles, sempiternal."[81] Essentially, in view of the criticisms levelled at steps four and five, I agree with these commentators. Instead of speaking of

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[79] Critique of Pure Reason, op. cit. [A188-9/B231-2] For a defence of this argument see Walsh, op. cit. Melnick's defence of Kant's Principle of the Permanence of Substance focuses on the role of time determination in Kant's argument but, surprisingly, he speaks only of the argument at B225 and the later passages at B 226-7 not of the above argument. See A. Melnick, "Kant's Proofs of Substance and Causation" in Guyer, P., The Cambridge Companion to Kant and Modern Philosophy (2006) pp. 217-221.

[80] See Bennett, op. cit. p. 199; Dryer, op. cit. pp. 367-8; Melnick, op. cit. p. 67; Strawson, op. cit. pp. 128-30; and Allison, (1983) op. cit. p. 207.

[81] For Bennett's distinction between substance$_1$ and substance$_2$ see Bennett, op. cit. pp. 182-4.

substances though, it is perhaps more fruitful to work with Allison's Backdrop Thesis and to speak of the perception of change as requiring a backdrop.[82]

> Step Seven: And it is thus unchangeable in its existence, its quantity in nature can be neither increased nor diminished.

This step presupposes that the substance spoken of in step six is quantitative in character, i.e. that it makes sense to speak of there being more or less of it. Yet this substance is also to be understood as being utterly devoid of any other attributes than the attributes 1) of serving as a model of time in general, 2) of serving as the ground for the alterations which are the changes which we perceive, and 3) of being absolutely permanent. At least, these are the only attributes that Kant's argument warrants attributing to this substance. Of course we have, as Kant had, the idea of substance in the sense of *matter*, i.e. as that which takes up space, but nowhere in Kant's argument is anything said or implied about substance as that which occupies space. We are left with the three attributes of substance listed above. Let us consider them in turn.

The question to be asked is, are any of the attributes (1)-(3) quantitative in character? If, as I think is evident, none are, then no *sense* has yet been given to the claim made in step seven that the quantity of the substance spoken of in the argument of the First Analogy "can be neither increased nor diminished." Consider attribute (1) of this substance, namely, its serving as a model of time in general. Although a model may be more or less faithful to what it is a model of, so that in this respect the attribute of being a model has a quantitative character, in Kant's argument the question of the faithfulness or otherwise of the time-representing substratum as a model of time in general does not arise; as far as Kant's argument is concerned the attribute of serving as a model of time in general is of an all-or-nothing character: either something has this attribute – of being a perfectly good model of time in general – or it does not.

Consider the next attribute of Kant's substance of the First Analogy, namely, (2), its serving as the ground for the alterations which are the changes which we perceive. Similar remarks apply here. Although some things are

[82] Allison himself argues that Kant does succeed in establishing the need for substance$_2$ if we are to be able to perceive change, duration or coexistence. Allison, (1983) op. cit. pp. 207-9.

more easily altered than other things this is irrelevant to the point at issue. As far as Kant's argument is concerned the attributes of serving as the ground for the alterations which constitute the changes we perceive is of an all-or-nothing character: either the substance Kant speaks of has this attribute or it does not and Kant has argued that it does have this attribute. As to attribute (3), that of being absolutely permanent, this is obviously of an all-or-nothing character: to speak of different degrees of being absolutely permanent is a contradiction in terms. Therefore, since none of the attributes that Kant's argument of the First Analogy warrants assigning to the substance spoken of in this argument is of a quantitative character we have no warrant for speaking of this substance as a quantity, so that to speak of its quantity being conserved, as is done is step seven, is to say something which, as yet at least, makes no sense.

3) Locatability in Space, Perceiving Change, and Knowledge of an Objective World

The coming into being of the palace in the example of the genie of the lamp cited in part one is, it has been argued (in part two), compatible with Allison's Backdrop Thesis, but not with the thesis that the change is merely an alteration in some substance, the reason being that the *place*, according to this tale, where the change is said to occur itself serves as the requisite backdrop for the change, and places are not substances. For many of the ordinary changes that we perceive in our daily lives the place where the change occurs is the backdrop for the change; the disappearance of the sun behind a cloud, the emergence of a rabbit from its burrow, are examples. This was all argued for during the discussion of step five of Kant's argument of the First Analogy.

Also noted at the end of that discussion was Kant's „last minute' argument of the First Analogy to the effect that the objective dating of events along a single time scale would be impossible if there were either absolute materializations – as with Aladdin's palace – or absolute annihilations. Kant takes this argument to entail the principle of the Permanence of Substance because he assumes that the perception of any (objective) event presupposes that the object perceived can be dated along a single time scale, and when arguing that Kant's „last minute' argument fails this assumption was not questioned. It shall now be questioned. Why would we assume that it would

be impossible to perceive an event unless what is perceived could be assigned a date?

Let us consider an example. Imagine suddenly finding ourselves we know not where, in a temporary state of amnesia in regard to the particulars of what we have previously experienced, and on a featureless expanse of grassy land where a thick fog prevents us from seeing anything else. A palace pops into existence in front of us. Although we have no idea where we are and cannot relate the materialisation we have just witnessed to any landmarks – there are none – we insist on the fact that we have perceived an *event*, and after we have walked around the palace grounds we add that this event was a case of creation *ex nihilo*. Where, it might well be asked, is the backdrop in such a case? The answer, I submit, is that part of ego-centrically locatable space which lies straight ahead of us at a distance corresponding both with the palace's looking as it does to us when we first see it and with its actual size which we are able to appreciate as we walk around it. In short, I am suggesting that ego-centric space can serve as the sole backdrop against which events – some events – can be perceived. But if this is granted do we not have a counter-example to Kant's assumption that to perceive an event presupposes that a date along a single scale can be assigned to it? For no date could be assigned to the materialisation of the palace in our example because our perception of it is utterly cut off from anything that could help us to relate what we have perceived to any other event whose date we could ascertain.

The example, though far-fetched, should be taken seriously as posing a difficulty for Kant's assumption about the dependence of event-perception on event datability along a single scale. But it would overstate things and also be very misleading to call it a counter-example. Rather, the example merely shows that Kant's assumption needs qualifying so as to allow for such cases as the above. For if, *per impossible* the *only* changes that were available for our perception were either absolute materialisations or absolute annihilations then we would have no opportunity for exercising our propensity to look for and discover *causal connections* between things and hence, as was argued in part five of chapter one, we would be unable to *understand* anything at all. We would be able to perceive the materialisation of Aladdin's palace but only because we have experience of sufficiently many other, ordinary, changes, i.e.

changes in the various things identified by Bennett as substances$_1$. Essentially, then, Kant's assumption stands. It is really part and parcel of his Copernican revolution.

Further light can be thrown on Kant's assumption – about the dependence of event-perception on the datability of the events along a single scale – by examining the succinctly expressed conclusion drawn by P.F Strawson concerning Kant's argument of the First Analogy. Strawson holds that Kant fails to establish the principle of the Permanence of Substance but succeeds in establishing something else of importance. The passage in question is this:

> "Experience of the objective demands the possibility of determining objective time-relations. To say that objective time determination is possible is to say that we can assign to objects and happenings temporal relations of coexistence and succession and that we can, where necessary, distinguish these relations from the temporal relations of our perceptions, though, of course, we assign them fundamentally on the strength of our perceptions. For this to be possible we must see objects as belonging to, and events as occurring in, an identical, enduring spatial framework. For this in turn to be possible, we must have empirically applicable criteria of persistence and identity, embodied in concepts under which we bring objects of non-persistent perceptions."[83]

Only the first sentence and the last two will be examined, for the second sentence merely explicates the first.

The first sentence – "Experience of the objective demands the possibility of determining objective time-relations" – states what I have been calling Kant's assumption about the dependence of event-perception on the datability of the events perceived. Now babies, very young children, dogs and chimpanzees are perfectly well able to perceive events. But it is doubtful whether it even makes sense to speak of *their* determining objective time relations amongst the objects and events they perceive. On the other hand, this could easily be done on their behalf by a sufficiently intelligent observer. Furthermore, that the latter is the case can be known *a priori*; for otherwise the behaviour of the perceiving beings concerned would make no sense whereas if, as is being supposed, they do perceive events it would make some kind of sense. There is, as Kant maintains, a connection between what is prerequisite

[83] Strawson, op. cit. p. 132.

for perceiving events and certain valid *a priori* inferences, but it should be acknowledged that the *perceiver* need not be able to draw these inferences.

Strawson goes on to say that "For this to be possible we must see objects as belonging to, and events as occurring in, an identical, enduring spatial framework." The same elementary point applies here. It is not necessary that any given *perceiver* of an event should see everything as existing within a single enduring spatial framework: the piecemeal way in which babies and animals respond to the particular conditions prevailing in their vicinity certainly suggests that they do not have a conception of such a „framework' (the word is far from ideal.) Nonetheless, someone of sufficient intelligence (an adult observer) could see *a priori* that a prerequisite of determining objective time-relations is that the relations be instantiated within a single enduring spatial framework.

The last sentence of the passage quoted from Strawson reads:

> "For this in turn to be possible, we must have empirically applicable criteria of persistence and identity, embodied in concepts under which we bring objects of non-persistent perceptions."

Now it is somewhat absurd to say of a dog, for example, that it applies empirical *criteria* of persistence and identity which are embodied in concepts[84] under which its sensory data is subsumed. And it would be even more absurd – or rather is would make no sense – to say that the dog's *brain* must apply criteria to anything.[85] Thus far the elementary point made above applies for the third time. But can we go beyond this? Can we say, on analogy with what has been said regarding the two previous sentences quoted from Strawson, that we can know *a priori* that someone of sufficient intelligence could specify a set of empirical criteria by reference to which the comparatively changeable sensory data at the sense organs of the perceiver (I am referring to the perceiver's sensibility in Kant's sense) could be identified as corresponding to or representing comparatively permanent objects and the alterations they

[84] It is odd to speak of criteria being „embodied' in concepts. Concepts should not be hypostatised.

[85] Of course Strawson himself is not guilty of this, but we have here an example of what M.R Bennett and P.M.S Hacker call the mereological fallacy – the fallacy of attributing to a part something that only makes sense (if it does make sense) when attributed to the whole. See Bennett, M.R and Hacker, P.M.S, Philosophical Foundations of Neuroscience (2003) pp. 68-73.

undergo? There is reason to believe that this could not be known *a priori*. For it cannot be known *a priori* whether the *grounds* on which we take what is given to us in sensibility as constitutive of comparatively permanent objects and their alterations could be spelt out as *criteria*, let alone – as the very use of the word "criteria" suggests – criteria that are complete, precise and unambiguous. Indeed, in what follows it will be argued, from an examination of the role of the understanding in our seeing that there has been a change in something, that there is reason to think that the grounds referred to here could not be spelt out as criteria.

4) The Backdrop Thesis, Understanding and Synthesis in the Perception of Change

Kant's argument of the First Analogy presents an analysis of what the preconditions are of our perceiving change. This in itself is remarkable. For what the word "change" and its cognates connote is something so fundamental that it might well have seemed that nothing much of interest could be said about it in general terms. Furthermore, and notwithstanding my criticisms of Kant's argument, the central idea on which Kant's argument turns, namely the Backdrop Thesis,[86] is (it has been argued) essentially correct, and as I hope to show in the following discussion, it throws light on fundamental matters concerning the perception of change that Kant does not himself pursue.

After developing the Backdrop Thesis I will then re-examine in its light the problem that Kant sets out to solve in his argument of the Second Analogy. Next – again in the light of the Backdrop Thesis – I will examine Donald Davidson's proposal that "we decide what counts as a change on the basis of what we want to explain, and what we think available as an explanation".[87] It will be argued that this overstates the case in regard to the involvement of the understanding in the perception of change. The chapter ends with a consideration of how the understanding *is* involved in the perception of change. Here is where the contributing theme of the thesis, concerning the nature of cognitive synthesis, is introduced.

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[86] On this crucial point I am indebted to Henry Allison. Allison, (1983) op. cit. pp. 201-203.
[87] Donald Davidson, "Laws and Cause", reprinted in Truth, Language, and History, (2005), p. 212.

A perceived change, if it is big enough, is something that (as we say) "strikes us"; there is something involuntary about it; we cannot *but* perceive the change. It is true that if we are given the task of finding what has changed in a given situation, as in a children's picture-puzzle, we can look for a change, look for it too even though we may have no idea what we are looking for. But even here, when we do perceive a change, it strikes us to some extent. There is something altogether *singular*, then, about perceiving a change. I have been speaking of the phenomenology of perceiving change, and the point in doing so is to draw attention to the fact that it is misleading as to what might be called "the logic" of perceiving change. *This* is set out in the Backdrop Thesis. The Backdrop Thesis does not merely state the preconditions which, as a matter of fact, make it easy to perceive change. The Backdrop Thesis states the preconditions of our perceiving change as such. A perceived change involves something *relational*, a relationship between something that has come before in our experience – namely, the *backdrop* – and something that comes after, which for the sake of brevity and clarity will be called the *forefront*. The perceived change itself is not just the forefront by itself but the forefront in its relation to the backdrop. In the normal course of events we do not experience driving along the highway at a steady eighty kilometres per hour as a change: we have habituated ourselves to the motion and do not perceive the latter as a change. But if the driver suddenly applies the brake we do perceive this as a change, a change for which the previously steady velocity of the car is the backdrop.

There is nothing contentious about the foregoing. The matter is evident enough upon a little reflection. Perceiving a change necessarily involves an antecedent backdrop – it may be anything at all – against which that for which it is a backdrop – which has been dubbed the forefront – stands out by way of contrast. We do, it is true, speak as if the forefront were itself the change, and this is generally perfectly in order, but the backdrop is always ‚presupposed', for without the latter there would be no perceived change, for that which the word forefront refers to would not stand out in contrast to anything. There is a consideration of some phenomenological interest: the backdrop itself may sometimes scarcely have been perceived. For example, whilst walking by a stream we may be so preoccupied that we do not notice the croaking of the

many frogs in the vicinity, yet as soon as they stop croaking we notice it. The point is that there must always *be* a backdrop whether we have previously noticed it or not.

Let us re-examine in the light of what has been said the problem which Kant's argument of the Second Analogy is aimed at solving. That problem, or rather supposed-problem – for, as I will try to show, it is not really a problem at all – is to explain how we can be justified in distinguishing objective changes amongst the things we perceive from merely subjective changes in the temporal order of our representations – in what is given to us in sensible intuition. As I sweep my gaze across the books on my desk there is a change in my visual representations, yet the books on the desk do not move. The question, Kant's question, is how can we be justified in being so sure of being thus able to tell when the temporal order of our representations corresponds to that of objective changes, of changes in the external world? Kant's answer, which has been criticized at length in the last chapter, is that it is only the temporal order of objective changes that we see as causally necessitated, where this ‚seeing as' involves our imposing the cognitive category of causality on what is given to us in sensible intuition. Prescinding now from the rightness or wrongness of this answer let us look again at the question to which it is an answer. This question takes it for granted that when we move our sense organs we are aware of changes in what we experience visually or otherwise. But this assumption is generally false. Generally, when I cast my eyes around me, I am not aware of any change in my visual experience – not, that is, unless I am deliberately paying attention to my visual experience as such instead of to what I am experiencing around me. Then, and only then, do I experience any change. Unless I am paying attention to my visual experience as such there is, I submit, no backdrop against which the visual experience which I get as a result of moving my eyes can be contrasted and hence perceived *as* a change. There is of course a sequence of changes in the patterning and intensity distribution of the light falling on my retinae, and this does generally result in a sequence of changes in my visual experience ‚as such', but the latter is not generally experienced *as* a sequence of changes. And the reason is that at no stage in the sequence is there a backdrop for any

of the stages immediately following, and in the absence of any backdrop there can be no perceived change.

It might be objected that by turning our attention onto our visual experience *itself* we do become aware of a sequence of changes in that experience when we move our eyes. True, but this only happens when we adopt an introspective attitude, and its very adoption, a deliberate decision on our part to treat how things look when we do *not* move our eyes as a backdrop, is a guarantee that we shall not mistake the changes we experience visually for objective changes in what we are looking at. Let us apply this analysis to Kant's own example of looking at a house [B236 and B238]. Either one's attention is on the house itself and not on one's visual experiences of the house or else one has decided to direct one's attention to one's visual experiences of the house rather than to the house itself. In the former case, for lack of a backdrop one does not even *experience* a subjective visual change so there can be no possibility of mistaking the subjective for the objective; in the latter case one does experience a subjective visual change but because one knows that the latter is a consequence of one's prior adoption of a distinctive introspective attitude there is no risk of mistaking the changes in one's visual experience for changes in what one is looking at. In neither case does the problem which the Second Analogy argument is intended to solve arise.[88]

The remainder of this chapter is concerned with the role of the understanding in our perception of change. Kant, it will be recalled, holds that it is the understanding that, by imposing the schematized category of substance on what is offered to us in sensible intuition, enables us to perceive change amidst these offerings. According to Kant's thesis the role of the understanding, although essential for the perception of change, is not sufficient; for only some of the offerings of sensible intuition are such as to constitute the raw material, so to speak, for the perception of change, other such offerings being such as to constitute the raw material for perceiving that there has been no change. On this latter point Kant's thesis is at one with common sense. It is

[88] We never see animals or young children – or for that matter adults – who are confused as a result of their own eye movements. The above analysis helps to understand why.

of interest then to consider what Donald Davidson says about the perception of change, because what he says raises difficulties for Kant's thesis.[89]

Davidson offers the following provisional definition of a change:

> "some predicate P is true of an object or situation at a given time, t, and subsequent to t P is no longer true of that object or situation."[90]

But, framed as it is in terms of the applicability or otherwise of predicates and not of the things the predicates apply to, the definition falls foul, as Davidson himself notes, of the following difficulty. Suppose we are looking at an emerald and the clock strikes twelve. The emerald continues of course to sparkle as green as ever. Nonetheless, we can imagine someone with a whimsical imagination, perhaps the philosopher Nelson Goodman – for it was he who came up with the idea and who realized the philosophical difficulties raised thereby – saying that there *was* a change in regard to the emerald when the clock struck twelve, namely a change in what Davidson dubs its "tolor" from grue to bleen, where something is *grue* if it is seen to be green before t (here twelve o'clock) or if it is seen to be blue after t, and where, conversely, something is *bleen* if it is seen to be blue before t or if it is seen to be green after t. Goodman and Davidson are of course aware that the predicates grue and bleen are ludicrously silly, but from a logical point of view they are perfectly good predicates, their criteria of application being no less well-defined than are the criteria of application of the predicates green and blue. Although there is of course no change in the gem's colour, our whimsical companion insists that there is a change in its tolor, a change from grue to bleen. The philosophical question raised by this admittedly ludicrous scenario is as follows: do we have to conclude that the only basis for rejecting our companion's account of things is that of the explanatory uselessness of what he says, i.e. that the concept of tolor helps neither to explain anything nor to

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[89] Davidson, (2005) op. cit. pp. 201-219.

[90] Ibid. p 210. Davidson is trying to establish what he calls the "cause-law thesis", according to which statements of singular causal relations always instantiate strict lawlike statements. Evidently, whether we are speaking of the former – singular statements – or the latter – the supposed covering lawlike statements – we are speaking of statements about *changes*. To establish his thesis, therefore, Davidson has to be able to distinguish changes from non-changes, and what Davidson has to say on this matter is a response to Nelson Goodman's discussion of grue in his book Fact, Fiction and Forecast (1983) first published 1979.

identify anything that needs explaining? Or, generalizing, do we have to conclude, as Davidson does, that:

> "Nature doesn't care what we call a change, so we decide what counts as a change on the basis of what we want to explain, and what we think available as an explanation."?

Is this really the only basis we have for ruling out a tolor change from grue to bleen as a genuine change? And can we rule out tolor changes on this basis anyway?

By filling out some more details of this change of tolor scenario it will be shown that Davidson's answer does not succeed in ruling out the possibility of tolor changes having explanatory significance and hence as being genuine changes. Imagine a society whose members are continually glancing at their watches to ensure that they do not miss the times for the many tolor changes which play an important part in this society's rituals. Failure to utter certain words in a certain tone at the various proscribed tolor changes is seen as reprehensible forgetfulness and lowers the offender's social status, and differences in how forgetful people are on other occasions is attributed to how meticulously they observe the tolor changing rituals. Since grue, bleen and tolor could be *given* significance in an imaginable society, for the members of such a society tolor changes would meet Davidson's guidelines for being genuine changes. While it is true that the behaviour of the members of this imagined society is utterly bizarre, what we *want* to say is that what have been called ‚tolor changes' are not really changes at all. Is there an intellectually satisfying account of change that would warrant our saying this?

It will be argued that the answer is that there is, and it has already been discussed at some length. It has to do with the Backdrop Thesis. Let us see whether our emerald's ‚change' in tolor from grue to bleen can be ruled out as a genuine change by this thesis. Suppose that our whimsical companion were to say that the backdrop for his perceiving this change is his seeing that the emerald is green just before the clock strikes twelve, and that the forefront for his perceiving the tolor change is his seeing the emerald to be green after the clock has struck twelve. Indeed, if the Backdrop Thesis is to cover the perceiving of changes in tolor then it could do so in no other way than this.

But although I have here identified something that I have called a backdrop and something else that I have called a forefront, these two somethings do not, as is required by the Backdrop Thesis, stand in *contrast* with each other. The emerald looks just the same after twelve o'clock as it did before twelve; there is no contrast between its appearance before twelve and its appearance after twelve. It is true that the emerald's appearance after twelve – the proposed forefront – is associated in the mind of the percipient with the clock's having struck twelve, whereas the emerald's appearance before twelve – the proposed backdrop – lacks this association in the percipient's mind. But this consideration bypasses the crucial point that the tolor change is supposed to be a change in the emerald itself, not merely in the circumstances pertaining to it, and by no stretch of the imagination could the striking of the clock be experienced by the percipient as a *part* or *aspect* of his experience of the emerald, for the emerald and the clock are, it may be safely concluded from the very definitions of "grue", "bleen" and "tolor", recognized by the percipient to be, and hence experienced as, two different things. However closely in the percipient's mind we imagine the association between the emerald and the striking clock to be, his experiences of the emerald and of the striking clock remain distinct even in the percipient's bizarre mind; for neither of the expressions "the striking clock is part of the emerald" or "the striking clock is an aspect of the emerald" makes any sense. The Backdrop Thesis has to be understood as requiring that the backdrop and forefront it speaks of be related either as whole to part or as whole to aspect of the whole, and the foregoing shows that perceiving a ‚change' in tolor does not meet this requirement. According to the Backdrop Thesis, then, it is not possible to perceive such a thing as a change in tolor, from which it may be concluded that a tolor change from grue to bleen is not just an utterly bizarre kind of change, it is not a change at all.

The above argument could no doubt be generalized. But I think enough has been said to show that Davidson's remarks about change are unsatisfactory. Nature may not, as Davidson says, care what we call a change, but if *we* did not care about what nature brings to our notice, care irrespective of what we want to explain or of what we take to be available as an explanation, then our explanatory endeavours would grind to a halt.

Kant is correct, I have argued, in maintaining that the perception of change requires the provision of a backdrop whose contrast with what is before us – in sensory intuition – enables us to perceive change. But, it will now be argued, Kant fails to realize that there is not just one backdrop, namely, a sempiternal substance. Rather, there are countlessly many and for each some degree of understanding or intelligence – sometimes much and sometimes very little – is required for "setting up the backdrop".

It will be helpful briefly to survey four grades of backdrop. First, there is a kind of backdrop much like that which Jonathon Bennett has called substance$_1$.[91] This kind of backdrop includes A) particular things, such as mountains, cars, items of furniture, and particular animals and plants, B) particular people, C) particular regions of the same stuff, such as heaps of sand, deserts, lakes or oceans, and D) particular regions of changing stuff, such as waterfalls and rivers. As an example of B) consider the case of a father who can see that his child's illness has taken a turn for the worse because he has as a backdrop the child's appearance health-wise an hour or so before. As an example of C), consider the case of a traveller who can see that a desert has undergone a transformation with its blooming wild flowers compared with its bleakness of a year ago. And so on. It is this kind of backdrop that will be the main concern in what follows.

The second kind of backdrop overlaps with C) and D) above and encompasses all the different *places* that we can recognize. For example, a child is struck by how different the playground looks now that the giant slide has been removed. Presupposed in perceiving a change involving either of the first two kinds of backdrop is the ability of the percipient to access such of her previous experiences of things and places as will serve as a backdrop for perceiving the change. Such a pronounced manifestation of intelligence (or understanding) is not presupposed in perceiving changes involving either of the two other kinds of backdrop to be discussed here. The third kind of backdrop presupposes nothing in the way of long-term memory but at most a sort of tacit short-term memory. Fireworks provide a good example: when we

[91] Bennett, op. cit. p. 182.

see the changes in the display of a roman candle we take its fixed position in *ego-centred space*, i.e. in space relative to ourselves, as the backdrop; and when we perceive the flight of a sky-rocket we are aware of a continuous change against the backdrop of its immediately preceding position in ego-centred space. This third kind of backdrop is much more difficult to speak about than either of the first two kinds, not because there is more to it but because there is much less. It is of such an elemental character that the rudimentary intelligence or understanding evinced in the object-constancy that it involves is difficult to characterize.

The fourth kind of backdrop is even more elemental in character, so much so that one might be inclined to doubt its very existence. Since the purpose of this brief survey is mainly to provide some perspective on the analysis below of the first kind of backdrop there is little need here to say much about this fourth kind of backdrop – and indeed, as with the third kind, not much can be said. With this fourth kind of backdrop there is no awareness of space, not even, as with the third kind of backdrop, of ego-centred space[92]. We can, I suggest, perceive or become aware of changes in our own state or level of well-being – the onset of a vague feeling of nausea for example. In such a case the backdrop is simply our immediately antecedent state of well-being. This, I submit, is the most primordial kind of backdrop for our awareness of change that can be imagined. It provides some perspective on the other much less contentious kinds of backdrop. In particular, it suggests that an elemental understanding – or precursor of understanding – is involved even in our awareness of that which is most primordial for us, viz. changes in our own state or level of well-being. It suggests that the realm of the cognitive reaches down to – or rather, given our evolutionary origins, arises with – our awareness of such changes.

The above fourfold classification of the backdrops against which we perceive change is very rough, and it is not intended to be exhaustive. Nothing, for example, has been said about musical compositions: these, for anyone who is familiar with them, may serve as the backdrops for perceiving changes in the way they are performed on different occasions. Enough has been said,

[92] Sudden sounds are difficult to localise but they are still perceived against a backdrop of ego-centred space; it is just that we are not sure of their placement against this backdrop.

though, to show that the backdrops for the changes which we perceive are very diverse, and that they comprise several quite different kinds or levels.

The focus now will be on the Backdrop Thesis in regard to the perception of changes involving the first kind of backdrop identified above. It will be seen how in our perceiving such a change, the understanding is involved in „finding' the relevant backdrop from our past experience and „bringing it to bear' on what it is a backdrop for, namely, the forefront whose contrast with the latter constitutes the change that is perceived. This initial statement contains an inaccuracy. Strictly speaking, what will be examined will be the role of the understanding when we perceive that there has *been* a change, that a change has (already) occurred, in something or someone. The earlier examples of the father who sees that his sick child has taken a turn for the worse and of the traveller who sees that the desert has been transformed by the blooming wild-flowers both illustrate this. The father did not see the actual coming about of the change in his child that so worried him, nor did the traveller see the wild-flowers sprout, grow and bloom. In each case the backdrop for the perceived change lay sometime back in the past experience of the percipient, the forefront of the perceived change being in the latter's present experience. It is this temporal gap between the backdrop and its forefront which has to be bridged whenever we perceive that something we are familiar with has undergone a change since we last saw it. The bridging, I shall argue, is accomplished through the understanding. Or rather, the bridging is a manifestation of the understanding.

The initial statement is also inadequate because it suggests an oversimplified picture of what is necessarily involved in perceiving that a change has occurred in something or someone. It speaks as if in the perceiving of any such change, what I have called the forefront of the change is *given* to the percipient, and that it is only the relevant *backdrop* to this forefront which has, so to speak, to be found from amidst the percipient's past experiences. This is incorrect, for the forefront of the perceived change is not something that is just given to the percipient. On the contrary, it is something which has itself, so to speak, to be *found*, to be found from amidst all that is now given to the percipient in sensible intuition, and this normally comprises much that is irrelevant to the change in question. Of course, if it is known what change a

percipient has perceived its forefront can be found easily enough. But what is being investigated here are the *preconditions* of a percipient perceiving that there has been a change, a change that has already occurred in something or someone, and according to the Backdrop Thesis as here developed it is the relationship between backdrop and forefront that defines the perceived change, not the other way round.

A precondition of a percipient perceiving that there has been a change in something or someone is that a certain backdrop drawn from the percipient's past experience stands out in contrast against a certain forefront drawn from the percipient's present experience. But to identify the backdrop presupposes that the forefront has been found and, conversely, to identify the forefront presupposes that the backdrop has been found. Neither can be found independently of the other. Neither backdrop nor forefront can be found until the change whose perception they constitute has been perceived. Under this construction we have a reasonably clear and accurate outline of the paradoxical „logic' that is involved in perceiving that there has been a change in something or in someone, the paradoxical „logic' that our understanding successfully takes in its stride. All this and more is illustrated by the examples of the father and his sick child and of the traveller in the desert. Let us consider the former in more detail.

The child has just woken up and is telling her father that she does not want anything to eat. She has a temperature and accepts her father's offer of a glass of lemonade. The curtains have been opened to let in the early light of a spring morning, and one of the windows has been lowered a little to let in some fresh air. There is medicine, a bottle of lemonade and a bowl of grapes on the small table by the child's bed. One of the blankets on the bed has been pushed aside because she had been too hot. There is a bookcase with storybooks and books on exploration and science, and their usually neat order has been disturbed. Some of the child's toys – fairies, dolls and horses – have been removed from the shelf, some have been left on the carpet, some are beside the bed and some are on the bed. Such is how things are when the father sees that his child now looks less well than when he saw her an hour ago. The purpose of relating so much detail is to illustrate how the forefront for the father's perceiving that his child is now less well than before is not

simply *given* to him. True, the signs constitutive of this forefront are all there right before his eyes: the perfunctoriness of his child's normally talkative speech, the careless way she has left a toy horse on her bed, which is so out of character, the much reduced expressiveness in the child's demeanour, and so on. But these signs coexist amidst *other* signs of *other* things, signs potentially or actually constitutive of the forefronts of other changes during the last hour or so that the father might have seen, and perhaps has seen, to have occurred: e.g. the now sunny sky, the bird-song chorus, the books that are out of their usual arrangement, the level of lemonade in the bottle, the grape on the child's pillow, etc. The contrast between the father's experience of each of these and a relevant backdrop would constitute for him the experience – the perception – of a change that need have nothing to do with his child's illness. Of course, because of his love and concern for his child the father might not notice any of these other changes, especially if they have no bearing on the medical condition of his child. The father's love and concern for his child evidently has a lot to do with why his understanding ‚picks out', so to speak, just that forefront which is relevant to his concerns from amidst all the other possible forefronts, forefronts constitutive of other changes that he might have perceived but for his concern for his child.

Similar considerations apply in regard to the *backdrop* that is constitutive of the father's perceiving that his child's illness has taken a turn for the worse. This is not simply something given (as perhaps one's visual field is given as a backdrop against which sudden movements stand out.) The backdrop has to be *relevant* to its forefront and much of the father's past experience is *irrelevant* here. How the child looks in full health is irrelevant (he already knew she was sick), and a great deal to do with how she looked an hour ago is irrelevant too: the length of her hair, the size and shape of her nose, ears and teeth, for example. On the other hand, a fresh pillow might well be relevant insofar as it would serve as a backdrop against which the grape subsequently left by the child, who up until that point had been fastidious, would stand out. Evidently, just as the father's understanding is involved in picking out the relevant forefront from amidst all that is irrelevant in what is now given to him through sensibility, so also is his understanding involved in

picking out a relevant backdrop for this forefront from amidst all his mainly irrelevant past experience.

This worked example illustrates the „logic' involved in perceiving that something or someone has changed and shows how *understanding* is needed to bridge the temporal gap between forefront and backdrop by ensuring that these latter are relevant to each other. Wherever relevance is spoken of in the above discussion, there understanding is called for.

Kant holds that our experience of change is a result of our being affected by the offerings of sensible intuition and of the work of the understanding on these offerings. What has been argued for in this chapter is consistent with this very abstract claim. Phenomenologically there can be no question but that we are to a significant degree passive in relation to the changes that we perceive. This was acknowledged from the start, although no attempt was made to explicate the character of this essentially passive side to our perception of change. Instead, the discussions have been concerned with the role of the understanding (intelligence in a wide and generous sense) in our perception of change, and this, it has been argued, is other than what Kant thinks it is. Certain cognitive powers and proclivities whose appropriate exercise is a precondition of our perceiving changes of the first kind or level discussed in the preliminary survey have been identified. Such powers and proclivities are a prerequisite for any sentient being having *our* kinds of experience of change. But the exercise of these cognitive powers and proclivities is not, as Kant thinks, at all separable from our empirical knowledge of things. Indeed, since these cognitive powers and proclivities have to be exercised *appropriately* if we are to be able to perceive changes in things it is essential that our empirical knowledge of the relevant things be taken into account – as in the example of the father and his sick child.

At the end of part three it was said that from an examination of the role of the understanding in seeing that there has been a change in something there is reason to think that the *grounds* on which we take what is given to us through sensibility as constitutive of comparatively permanent objects and their alterations could not be spelt out as *criteria*. The discussion, in the light of a more developed version of Allison's Backdrop Thesis, of the example of

the father's seeing that his child's illness has taken a turn for the worse, is intended to provide such a reason. The paradoxical logic involved in the appropriate matching up of backdrop and forefront that, according to the Backdrop Thesis as here developed, is prerequisite for perceiving that there has been a change in something is such as to suggest that there are no generally applicable criteria by reference to which the backdrops and matching forefronts constitutive of the changes in things that we can perceive could be identified. Proofs here are not to be expected, so this is as good a reason as is likely to be found to think that any project of spelling out grounds as criteria could not be carried through.

The paradoxical logic involved in the appropriate matching up of backdrop and forefront in the perceiving of changes in things introduces the contributing theme of this thesis. As Kant maintains, syntheses of various kinds are constitutive of what it is to *understand* anything. The appropriateness required of these syntheses could not be ensured by reference to any *criteria*, let alone criteria that could be specified in complete and unambiguous detail.[93] The matching up of backdrop and forefront discussed in this final part of the chapter is an example both of cognitive synthesis and of what we might call the latter's *discriminating* character.

In chapters three, four, six and eight further examples of the syntheses which are part and parcel of our being able to understand things will be introduced, hereby our conception of cognitive synthesis may be enriched and clarified. A comparison with Kant's conception of cognitive synthesis will be deferred until chapter six.

[93] This has not been fully appreciated by Kant.

Chapter Three

The Argument Concerning the Anticipations of Perception

This chapter examines Kant's argument for the Anticipations of Perception, namely, that "In all appearances, the real that is the object of sensation has intensive magnitude, that is, a degree."[94] It will be argued that Kant does show that there are the *a priori* anticipations of perception he speaks of but that what Kant calls the categories of Quality, namely, Reality, Negation and Limitation, for which he maintains that ‚degree of sensation' is the schema are not really categories at all. Furthermore, the scope of Kant's argument needs to be broadened so as to encompass *a priori* anticipations in regard not only to sensory intensity but to continuously variable qualities, as of pitch or shape, of every kind that we can perceive. The significance of Kant's argument, its significance in particular for our understanding of understanding, is not lessened by the above qualifications. It is, I shall try to show, all the greater. I have spoken of Kant's ‚argument' for the Anticipations of Perception, although it might seem that what he has to say amounts only to ‚supporting considerations'. The word "argument", however, has the advantage of being shorter, and in any case Kant himself entitles what he has to say in this interesting section of the Critique, a proof.

1) Kant's Argument: Intensity of Sensation and Reality

Kant's principle of the Anticipations of Perception is more fully stated in the first edition (A) of The Critique than it is in the second edition (B). In B the principle is stated thus:

> "In all appearances, the real that is an object of sensation has intensive magnitude, that is, a degree."

In A the principle is stated as follows:

> "The Principle which anticipates all perceptions, as such, is as follows: In all appearances sensation, and the *real* which corresponds to it in the object (*realitas phaenomenon*), has an *intensive magnitude*, that is, a degree."

[94] Critique of Pure Reason, B 207.

In A, but not in B, it is made explicit that the principle has to do both with our (subjective) sensations and with empirical (objective) reality. In A there is, whereas in B there is not, an explicit reference to our sensations as something purely subjective. Since the principle itself concerns both our sensations and the empirical reality which corresponds to them the A version is the better guide. Kant's argument may be divided into six steps and, as we examine it below, in following each step the above two-fold reference of the principle of the Anticipations of Perception should be kept in mind.

> Step One: "Perception is empirical consciousness, that is, a consciousness in which sensation is to be found. Appearances, as objects of perception, are not pure, merely formal, intuitions, like space and time. For in and by themselves these latter cannot be perceived. Appearances contain in addition to intuition the matter for some object in general (whereby something existing in space or time is represented); they contain, that is to say, the real of sensation as merely subjective representation, which gives us only the consciousness that the subject is affected, and which re relate to an object in general."[95]

Here, Kant abstracts completely from that which is spatial or temporal in perception and considers only what is left after this exercise in abstraction. He first describes what is left as, "the matter for some object in general (whereby something existing in space or time is represented)". This remainder he then describes as, "the real of sensation as merely subjective representation", which, I suggest, may be more straightforwardly put by speaking simply of ‚sensation', or of ‚sensation as something quite subjective'. So far Kant's remarks are not very illuminating but what he goes on to say is more helpful (although still awkwardly expressed.) Paraphrasing, he says – of sensation as something subjective – that it makes us aware that we are being *affected* by something, something to which we *impute* objective existence. True, Kant does not explicitly state that what we impute objective existence to is the very same as whatever it is that is affecting us – as whatever it is that is making us have the sensations that we are having – but this is the most reasonable interpretation that can be given of what Kant says. First, through our purely receptive sensibility we are affected by something, i.e. caused to have certain sensations, and we are *aware* of being thus affected; then, we impose the pure spontaneity of the categories on our affected sensibility and thereby become

[95] Ibid., p. 201, B 207-8.

aware of something objective in space or time that is causing us to have the sensations we are having. This ‚something objective' is what Kant means by an "object in general". There may be other interpretations of Kant's words here but I think that this interpretation helps to explicate the implied distinction in the A statement of the principle of the Anticipations of Perception between 1) ‚sensation' and 2) ‚the real which corresponds to it in the object'. The main objection to the above interpretation is that it attributes to Kant a willingness to speak of our being aware of our being affected by something, i.e. of our being aware of our sensibility's being caused – by something or other – to convey to us certain sensations[96], and such an awareness is not obviously explicable in terms of Kant's *category* of causality. But Kant does indeed speak in this way: there is another example of it in step four.

Is what Kant says in step one true? If true is it true *a priori*? And if true *a priori* is it analytically true? I suggest that we do not press these questions. Clearly, what Kant says presupposes that we have had some empirical experience, and what he has to say about the part played by our sensations in the latter will become clearer as we examine the next steps of Kant's argument.

> Step Two: "Now from empirical consciousness to pure consciousness a graduated transition is possible, the real in the former completely vanishing and a merely formal *a priori* consciousness of the manifold in space and time remaining. Consequently there is also possible a synthesis in the process of generating the magnitude of a sensation from its beginning in pure intuition = 0, up to any required magnitude."[97]

Kant is here speaking of our sensations, not of what our sensations correspond to. We can, he claims, imagine a particular sensation gradually disappearing completely and also the reverse process of a sensation gradually growing from a magnitude of zero to any magnitude whatever. According to Kant the latter process actually occurs as an instantaneous synthesis in generating our

[96] This ‚being aware of our being affected by something' falls within the domain of C.S. Peirce's category of Secondness. Peirce himself held that our notion of causality comprised more than just the idea of a certain kind of lawfulness – his Thirdness – and what Kant says in his argument concerning the Anticipations of Perception fits in with Peirce's view that causality comprises both Secondness and Thirdness.
[97] Ibid. B 208.

sensations whenever they occur, but this conclusion is not of much relevance to his argument here.

Let us consider two examples given by Kant. They are the sensations of redness and of heat. Quite contrary, of course, to what Kant intends, both examples show that the statement of step two needs to be qualified, though in different ways. Kant says that "Every colour, as for instance red, has a degree which, however small it may be, is never the smallest; and so with heat,…". Let us consider these in turn. A red patch – that venerable example – may vary in how saturated its redness is: the red, whatever its particular shade, may vary from rich and full to very faint, the reflected light in question varying from being exclusively from the ‚red' end of the visible spectrum to being very much mixed with light from all the other visible wave-lengths. Now for any given observer on any given occasion there is a degree of saturatedness of the (objectively) red patch at which the observer would no longer see the patch as being red, however slightly. If we think of redness as something objective, as the presence of light of a certain wave-length, then it is plausible – albeit, as we now know from quantum mechanics, incorrect – to suppose that redness, its degree of saturation, may vary by infinitesimally small degrees, and this is precisely how Kant thinks of our sensations, such as that of redness, in step two. But it is not plausible, and is in fact false, that our sensations mirror their physical causes in this respect. For each of us there is a *just-noticeable* degree of redness – the degree of (objective) redness may vary from person to person and from one occasion to the next, but the sensation itself is in this respect of an all-or-nothing character. The same is true generally. This is a significant qualification of Kant's argument, but once made it leaves the argument intact. We can still speak perfectly well of *degrees* of redness, loudness, brightness, etc., and this is the essential point for Kant's argument.

The redness example does not require us to broaden the scope of Kant's argument. The hotness example, on the other hand, does suggest that its scope should be broadened. Whereas with the redness example Kant's mistake is to think that our sensations can vary upwards in degree by any amount however small from zero, his mistake with the hotness example is the more serious one of thinking that the concept of zero is applicable at all. The least implausible candidate for a zero degree of hotness would perhaps be the

temperature of one's own body, or more precisely, the temperature of one's own body when one is feeling neither hot nor cold but „just right'. Nonetheless, surely this degree of hotness is better thought of not as the *absence* of something but as the *presence* of something with a degree intermediate between warm and cool. The case of pitch perception makes the point beyond dispute. We can hear a continuous range of pitches from very low, not indeed "up to any required magnitude" but to very high pitches, but it makes no sense to speak of any note as being of *zero* pitch. The same is true of the sensations of smoothness and shininess.

These latter examples raise a further complication for Kant's analysis. For although neither smoothness nor shininess is perceptually a spatio-temporal attribute (albeit that what corresponds to them objectively is, as Locke conjectured), both presuppose the existence of surfaces, of the continuous extension of something in two dimensions. Neither *is* an extensive magnitude, but both *presuppose* the presence of an extensive magnitude. This is something that Kant, in abstracting completely from the spatio-temporal in order to focus on non-spatio-temporal magnitudes, overlooks. Our sensations exemplify more kinds of magnitudes than Kant's analysis allows for. However, as will be shown in part three, anticipations of perception are possible in regard to these magnitudes as well as to the ones, such as loudness and brightness, which Kant's argument actually applies to.

> Step Three: "Since, however, sensation is not in itself an objective representation, and since neither the intuition of space nor that of time is to be met within it, its magnitude is not extensive but *intensive*. This magnitude is generated in the act of apprehension whereby the empirical consciousness of it can in a certain time increase from nothing = 0 to the given measure."[98]

Kant is still speaking here of our sensations, not of what they correspond to in empirical reality. Kant gives few examples but it is evident enough that when he speaks of intensive magnitudes in his argument he means such magnitudes as loudness and brightness, i.e. of magnitudes that range from zero – or rather, as has been claimed, from the scarcely noticeable – to the very great. Magnitudes such as pitch, smoothness and shininess fall outside Kant's

[98] Ibid. p. 202, B 208.

classification. They are certainly not extensive magnitudes but neither are they intensive magnitudes in the above sense: very low notes and very rough or dull surfaces may be as noticeable as high notes or very smooth and shiny surfaces. Kant's classification of magnitudes into extensive and intensive is not exhaustive. Although this is a defect in Kant's actual argument, it is easy enough, as will be shown in part three, to show that the anticipations of perception pertain not only to Kant's intensive magnitudes (as defined above) but to nearly all non-extensive magnitudes. Basically, notwithstanding these criticisms, Kant's argument is sound.

Kant speaks in step three again of sensation being synthesised, of its being "generated in the act of apprehension whereby the empirical consciousness of it can in a certain time increase from nothing = 0 to the given measure." This harks back to his Transcendental Deduction of the Categories, although the above claim is not any more essential to that argument than it is to the present argument. The idea that there is a pre-cognitive synthesis in the workings of the pure sensibility is an interesting one but Kant's argument concerning the anticipations of perception can manage perfectly well without the idea.[99]

> Step Four: "Corresponding to this intensity of sensation, an *intensive magnitude*, that is, a degree of influence on the sense [i.e. on the special sense involved], must be ascribed to all objects of perception, in so far as the perception contains sensation".[100]

A bright light affects the eyes, affects us more strongly than a weak light does, and if we apply Kant's categories to the sensation and thereby take it to be something objective then we take this –whatever it is – to be affecting us strongly. The same thing is true when we hear a loud sound. Kant's claim here may sit uneasily with his view of causation as rule-governed succession, but that it captures a fundamental truth is, I think, undeniable. It is worth noting, though, that sensory intensity is not the same as, and so certainly cannot be defined in terms of, ‚how strongly our senses are influenced by something': if

[99] It is disconcerting, however, to be told that the synthesis takes place "in a certain time", especially as a little later Kant says that, "Apprehension by means merely of sensation occupies only an instant."

[100] Ibid. p. 202, B 208.

we overhear our name mentioned quietly by someone if may affect us more strongly than the loud music which is being played in the room, for example.

> Step Five: "Every sensation, however, is capable of diminution, so that it can decrease and gradually vanish. Between reality in the [field of] appearance and negation there is therefore a continuity of many possible intermediate sensations, the difference between any two of which is always smaller than the difference between the given sensation and zero or complete negation. In other words, the real in the [field of] appearance has always a magnitude. But since its apprehension by means of sensation takes place in an instant and not through successive synthesis of different sensations, and therefore does not proceed from the parts to the whole, the magnitude is to be met with only in the apprehension. The real has therefore magnitude, but not extensive magnitude."[101]

That our sensations have magnitude – that they vary in intensity – is undeniable; and that the real in the field of appearance has magnitude insofar as it is extended in space or time is also undeniable, provided that we construe Kant's phrase "the real in the field of appearance" to be referring simply to whatever it is that is causing us to have the sensations that we are having. But that the real in the field of appearance has "magnitude, but not extensive magnitude" cannot be accepted at its face value. This book is something ‚real in the field of appearance', and it certainly has magnitude, but, even if it is allowed that it has a non-extensive magnitude, it *also* has extensive magnitude. The book may affect my visual awareness to a greater or lesser degree but this does not mean that the *source* of this power of affecting my visual awareness is not something purely extensive: it might, for example, be the book's considerable size. Another example: there are plenty of shiny things. These are as ‚real in the field of appearance' as anything else. It is imaginable, albeit false, that the source of their shininess is something non-extended about them. But to deny that these shiny things lack extensive magnitude would be absurd: it would preclude their *being* shiny.

I take it that Kant does not intend to deny any of this. His unusual language is presumably connected with his transcendental idealism. To spell out what Kant really means here, or at least to spell out what he is getting at, is not the task of this thesis. Instead of saying, with Kant, that the real in the field of appearance has magnitude but not extensive magnitude, it may be said that our sensations vary in intensity and that these variations are caused by ‚the

[101] Ibid. p. 203, B 210.

real in the field of appearance', but that what it is *about* ‚the real in the field of appearance' which causes our sensations to vary in intensity must be left to empirical inquiry.

> Step Six: "Every sensation, therefore, and likewise every reality in the [field of] appearance, however small it may be, has a degree, that is, an intensive magnitude which can always be diminished."

This follows from steps one to five, and, given the qualifications proposed above, it is correct. Whatever our future empirical experiences may be we are justified in anticipating that the sensations they involve can vary in intensity and that therefore empirical reality must be such as to ensure this.

2) The Anticipations of Perception and the Quality of Judgments

For the sake of brevity let us call the statement of the Anticipations of Perception the ‚AP principle'. Then, according to Kant, the intensive magnitude spoken of in this principle is a schema, the schema that corresponds to what he calls the categories of Quality. But since there are three categories of Quality, namely Reality, Negation and Limitation, the question arises as to which of these is the category for which intensive magnitude is the schema. For there are here three categories and only one schema. Addressing this question will take us towards the heart of Kant's account of pure reason. First, though, something needs to be said (if only to serve as a reminder) about what Kant means when he speaks of the categories of Quality and of their schemata.

A statement, proposition, or, more generally, a judgment may be affirmative or negative. That this is an apple, that there is a path going around the obstacle, that it will probably rain, and that every athlete needs to develop self-control are affirmative judgments; their denials are negative judgments. Every judgment is either affirmative or negative, but there are two sorts of affirmative judgments, namely, what may be called straightforwardly affirmative judgments, examples of which have been given above, and what in logic are called infinite judgments, an example of which is the judgment that ‚this is a non-apple'.[102] When, in logic, one wants to speak *about* the fact that a judgment must be either affirmative or negative one speaks about what is

[102] Infinite judgments are so named because they are true of infinitely many *kinds* of things: a non-apple, for example, could be anything from a galaxy to an oil-filter for a car.

called its quality. The quality of a judgment may be affirmative, or negative, or infinite – and it must be one of these.

Three of Kant's twelve categories, i.e. of his pure concepts of understanding, are intimately related to the quality of judgments – which is why he calls them the categories of Quality. To the affirmative judgment there corresponds his category of Reality; and to the negative judgment there corresponds his category of Negation; and to the infinite judgment there corresponds his category of Limitation. What do these correspondences amount to? Kant holds that a precondition of objective perception is that one each of the categories of Quantity, Quality, Relation and Modality be applied or imposed upon the ‚raw data' of sensibility. Suppose, for example, that you are looking at an elephant at the zoo, then the objective character of your experience – that you believe that, i.e. ‚take it' that, there is a real elephant in front of you – depends, according to Kant, on your understanding having applied a category of Quantity, a category of Quality, a category of Relation, and a category of Modality to the raw visual data provided by your eyes. The concern here is only with the category of Quality. So, there are just three alternatives: that your understanding has applied the category of Reality, i.e. that *there is* (an elephant there); that your understanding has applied the category of Negation, i.e. that *there is not* (an elephant there); or that your understanding has applied the category of Limitation, eg. that *there is a non-*cafe there. Of course, since you have no doubt that you are looking at an elephant it is the first alternative that is realised in your case. But if you had been looking into the elephant enclosure when the animal was not there your understanding would have applied the category of Negation. (As to when, if ever, your understanding would apply the category of Limitation is not within the scope of this enquiry.) Roughly, then, the category of Reality is tantamount to the notion of ‚yes, there is', and the category of Negation is tantamount to the notion of ‚no, there is not', (while the category of Limitation is tantamount to the notion of ‚yes, there is a non-something-or-other'.) It should perhaps be added that the application – "by your understanding" as Kant would say – of the category of Reality to the raw data of sensibility does not guarantee that what you take yourself to be perceiving is really there; it guarantees only that you have put yourself in a position to be right or wrong

about the matter. The same is true of the category of Negation: its application does not guarantee that what you take not to be there is really not there.

Now Kant holds that the application of the categories to the raw data of sensibility is never direct. It is always mediated by what he calls a "schema". The schema of a category is that which answers to a description of the general character of the raw data of sensibility under which the category is applicable to this raw data. Schemata are needed, according to Kant, because the raw data of our sensibility are always in time, whereas the categories are not temporal entities yet have to be universally applicable *to* temporal entities – our raw sensory data – and Kant assumes that the temporal conditions of their application can be satisfactorily described in general terms.[103]

So, the question arises of what the schema is for the category of Reality and what the schema is for the category of Negation. (This question must be answered before the corresponding question in regard to the category of Limitation can be addressed.) Kant himself holds that the intensive magnitude of the raw data of sensibility, the intensive magnitude spoken of in his AP principle, is the schema for quality, but this leaves only one schema for three categories. Furthermore, the only answer suggested by Kant's argument for the AP principle Kant himself explicitly – and consistently with his argument – rejects. It might perhaps be thought that the schema for the category of Reality would be ‚the presence of raw data of sensibility, raw data of some degree of intensity', and that the schema for the category of Negation would be ‚the absence of any raw data of sensibility'. But Kant points out in the following passage that this would be incorrect.

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[103] At B 179 Kant says the following: "… pure *a priori* concepts, in addition to the function of understanding expressed in the category, must contain *a priori* certain formal conditions of sensibility, namely, those of inner sense." By "inner sense" Kant means time. I take it that Kant is not here making any distinction between ‚a pure *a priori* concept' and ‚a category'. I also take it that when Kant says that pure *a priori* concepts must *contain* (my emphasis) certain formal conditions of sensibility – which sounds very odd – he means that such concepts, i.e. of categories, must *meet* such conditions. Kant continues, "These conditions of sensibility constitute the universal condition under which alone the category can be applied to any object. This formal and pure condition of sensibility to which the employment of the concept of understanding is restricted, we shall entitle the schema of the concept." I take it that in describing the conditions of sensibility under which a category is applicable thereto as "formal and pure" Kant is implying that these conditions can be satisfactorily described in general terms. In any case, if these conditions *cannot* be described in general terms there would be no reason at all to speak of schemata in regard to the categories of the understanding.

> "If all reality in perception has a degree, between which and negation there exists an infinite gradation of ever smaller degrees, and if every sense must likewise possess some particular degree of receptivity of sensations, no perception, and consequently no experience, is possible that could prove, either immediately or mediately (no matter how far-reaching the reasoning may be), a complete absence of all reality in the [field of] appearance. In other words, the proof of an empty space or of an empty time can never be derived from experience."[104]

It is perfectly true that there is no possible experience or lack of sensation from which we could correctly infer the absence of all reality where or when we are experiencing this lack. We might suppose that what we have before us is an absolute vacuum but the possibility that (as contemporary physics maintains) it is really full of things going on (the creation and destruction of virtual particles), or that with suitable instruments for extending our powers of perception we would not be able to prove as much through future observations (as has in fact been done) cannot be ruled out *a priori*. The absence of any degree of sensation in our experience is no warrant for concluding that nothing whatsoever exists in a certain region of space or time. This conclusion is both correct and consistent with Kant's argument concerning the Anticipations of Perception.

Under this construction Kant is left without a schema for the category of Negation – and hence without a schema also for Limitation. What about the category of Reality? Is the schema for this, „degree of sensation'? I believe not. For even if we allow that our experiencing some degree of sensation is a sufficient condition of our being confronted with something that is real it is not, as the foregoing remarks make evident, a necessary condition, which the conditions constitutive of a schema would have to be. Kant has no schemata at all for his categories of Quality. I have argued that Kant's argument concerning the AP principle is, with the qualifications noted, essentially correct but the principle does not provide any schemata for the group of categories (of Quality) it is associated with in his philosophy.

The question remains, then, of how the AP principle *is* related to Kant's categories of Quality. Let us address the question first in regard to Kant's category of Reality. Less than abstract reasoning an example is called

[104] Ibid. B 214

for. I shall first describe a common enough kind of situation at some length before going on to make a single point about it.

You open the door of you living room and notice that your daughter's kitten is asleep on the sofa; your view of the kitten is limited, from where you are standing, to its tail. Let us suppose that you are perfectly correct in this: your perception is veridical.[105] The kitten is a conspicuous light orange in colour and its tail attracts your attention against the backdrop of the pale grey of the sofa. (Kant never mentions how sensory intensity can depend on context.) Also, you had expected the kitten to have been in the garden because this is where you last saw it when you went out an hour ago and nobody, so far as you know, has been home since. My purpose in giving such detail is not to illustrate an abstract point more vividly, but because *such detail is integral to our properly understanding what objective perception involves*. The (supposed) facts being considered are altogether typical of what happens when we see that things are thus and so. The visual sensation of orangeness caused by the effect on your eyes of light that has been reflected off the kitten's tail is of a fairly high intensity. But there are other bright objects in the room and the intensity of your visual sensation is only one factor among others that is relevant to your current cognitive experience, i.e. to your perceiving what you are perceiving. Pre-eminent among these other factors are all the things that you know that are *relevant* to the case. Some of these factors have already been mentioned, and to these must be added your knowledge – although it sounds pompous to call it such – that your daughter's kitten has an orange tail and that where there's a tail there's an animal. Understanding plays a tremendous part in all this. A visitor who did not know that you kept a kitten might well not have seen that there was a kitten asleep on the sofa. Also, even if your daughter's kitten had a grey tail you would probably still have noticed that the animal was asleep on the sofa even though the visual sensation involved would have been less intense than in the example given.

The point is that although there is all this and much more to be said about what lies behind your seeing that your daughter's kitten is asleep on the sofa, all this that is causally relevant to your perceptual experience being what

[105] Perception may of course be objective yet mistaken – non-veridical, and I will adapt the example to cover such cases after we have examined the case of veridical perception.

it is, your perceptual experience itself is a discrete mental episode which involves something like a judgment that your daughter's kitten is asleep on the sofa. Your mental state is similar to what it would be like if you were actually to voice this judgment. Much of what lays behind your perceptual judgment concerns things that may vary in degree – the intensity of your visual sensations in particular – but the concept of ‚degree' has no application to your perceptual judgment itself. No wonder then that ‚degree of sensation' is not a schema for any category of Quality. At the most ‚degree of sensation' could be *relevant* to the application of such a category – supposing, that is, that there is such a category.

The facts here are obvious which may make the above point which presupposes them difficult to get hold of. But I believe that upon reflection the contrast between the temporally discrete all-or-nothing character of perceptual judgments and the temporally open-ended and in large part graded character of their causal antecedents is remarkable.

Strictly speaking, I have slightly overstated the case. Certainly, we do not go around making explicit verbally formulated judgments about what we perceive. Nor do we normally think such judgments to ourselves. Rather, objective perception requires that we be *ready* to make or assent to such judgments should we be called upon to do so. The following observation of Stephan Körner's is of interest in this connection:

> "But, though objective experience cannot be had without perception, we can and do have such experience without passing objective empirical judgments. I cannot be confronted with a house or eat my dinner without perception and thus without its necessary conditions, space and time. But I can experience these objects without judging that they are a house or food."[106]

Everything here depends on how broadly we construe the word judgment. Of course, we do not normally *say* "Here is a house", or "Here is my dinner", when confronted with a house or when eating our dinner. Nor do we formulate these statements to ourselves without speaking. The house and the dinner are perceived, the perception being perfectly objective, without the accompaniment of any uttered or thought words on our part. All this notwithstanding, can it not be said that our attitude, demeanour and behaviour

[106] Körner, (1955) op. cit.

in regard to the house and to the food evince beliefs, *tacit* beliefs admittedly, on our part that „Here is a house' and „Here is food'? I cannot see why not. And a belief, even a tacitly held one, surely involves a judgment to the effect that things are thus and not otherwise.

The application of Kant's categories of Quality does not, according to Kant, ensure that one's perceptual judgments are correct. It ensures, or rather it contributes towards ensuring – for the other categories need to be applied too – only that one takes the raw data of one's sensibility to represent something objective. The example can be easily adapted to the case of non-veridical perception. It need merely be supposed that what you take to be your daughter's kitten's tail is really something else instead, perhaps the tail of a soft toy dinosaur. Your experience as you open the living room door is exactly the same as it was before, only now you are wrong in what you take yourself to have perceived. Nonetheless, everything that has been said about the veridical case examined applies equally to this non-veridical case.

Kant has little to say about the difference between veridical and non-veridical perception. Essentially, he holds that objectivity is conferred on one's experience by the application of the categories of the understanding to the raw data of sensibility: this is his central thesis, the heart of his transcendental idealism. As for the veridicality issue, he would presumably hold that this has to do only with whether our *empirical* concepts are correctly or incorrectly applied to the raw data of our sensibility. However, such a sharp separation between questions about objectivity and subjectivity on the one hand and about veridicality and non-veridicality on the other is not in keeping with the fact that objectivity in perception presupposes that perception is *largely* veridical. That this is so can be shown by an example. Imagine someone who repeatedly voices what others at first take to be perceptual judgments but who is always wrong. Not only that but she is wrong about everything that her supposed perceptual judgments appear to refer to: instead of just being mistaken about there being a kitten asleep on the sofa she is mistaken also about there being a living room with a sofa in it. Then, however much this person avers that she is perceiving objectively, we would, as the pattern of her behaviour became clear to us, refuse to allow that she is

perceiving objectively. Indeed, we would have no reason to believe that she was perceiving anything at all.

Let us modify the example again. This time you open the door of your living room, look around, and conclude that your daughter's kitten is not in the room. Kant would presumably hold that you have applied the category of Negation to the raw data offered by your visual sensibility, although his remarks cited above at B214 perhaps suggest otherwise. But the only concrete situation which answers to his remarks there is that of a scientist or philosopher gazing out into space and wondering whether there is anything at all in the space she is gazing at or whether there is literally nothing at all there, i.e. whether it is a vacuum in the strict sense, and such a situation very rarely arises, whereas the category of Negation is supposed to be *generally* applicable to human experience. The example of seeing that the kitten is not in the living room is typical of our negative perceptual judgments and is a world away from the situation envisaged by Kant at B214.

On what grounds would you conclude, from your looking around the living room, that your daughter's kitten is not there? First, there must be no signs that the kitten is in the room, and this may be enough to go on: an *absence* of certain sensations, therefore. Second, there may be signs that the kitten is not in the room, e.g. that the cat door (which only opens from the inside and remains open unless it is shut manually) is open: the *presence* of certain sensations, therefore. But the chief point is exactly the same as before: the intensity of your sensations, provided you have them, is of very little importance here; it is only because you know what the having of certain sensations *means*, because you understand their *significance*, that you can make your negative perceptual judgment. To use Kant's terminology of categories, your application of the category of Negation is a consequence of your prior empirical knowledge and understanding of many sorts of relevant things. Kant holds that the application of the categories is epistemologically prior to the application of empirical concepts, but if the above reasoning is correct this is not the case: the application of the categories necessarily involves the application of empirical concepts, their appropriate application too. The same is true for the category of Reality. This is why there could be no

schemata for these categories. The application of schemata would not require drawing upon empirical knowledge.

I have been speaking uncritically of „Reality' and „Negation' as categories. But I think the following considerations will show that they are not really categories and that to call them categories obscures how they are related to the other – genuine – Kantian categories. Reality and Negation may be characterised as what, in perception, corresponds to the assertion or denial respectively, whether tacit or otherwise, of the perceptual judgment which the perception involves. Now although we may speak of a judgment, here a perceptual judgment, in abstraction from the speech act[107] of asserting or denying it, assertions and denials are nothing other *than* judgments, whether these be stated or unstated. To assert something or deny it is not to apply a category *to* a judgment but to make the judgment. By contrast, to apply any of Kant's categories of Quantity, Relation or Modality to the raw data of sensibility is to *characterise* a judgment, the very perceptual judgment made by the understanding that, according to Kant, confers objectivity on our experience. It might, perhaps, be permissible to speak of negation as characterising a judgment, and it may be this which encourages the thought that Negation is a category; but to speak of negation as „characterising' a judgment is very misleading because a negative judgment is nothing other that the denial of something, which denial is nothing other *than* a judgment, a judgment that something is not the case. Therefore, in speaking of Quality as a triplet of categories Kant mistakes the whole for a part or aspect of the whole.

The above consideration helps towards an understanding of why there are no schemata for the so-called categories of Quality. For it would be absurd – it would make no sense – to speak of schemata for making perceptual judgments. When making perceptual judgments we take each case that comes before us on its particular merits. In no case, and in not even the loosest sense, do we compare the raw sensory data that is before us with anything standardised, such as a schema.

The implicit *aim* of perceptual judgments is to grasp the truth about that which is before us which is relevant to our concerns and interests, and

[107] J.L Austin, How to Do Things with Words (1965)

there could be no schema for such relevance – no schema which would aid us in determining or deciding what is, or might be, relevant.

3) Other Anticipations of Perception: Continuously Variable Qualities

Repeatedly[108] in his account of the Anticipations of Perception in the Critique Kant speaks of the real in the field of appearance as having a degree. Furthermore, near the end of his much briefer account in the Prolegomena (§24) he says that "…all sensations without exception have degrees, and thus what is real in all appearances has degrees." There is no doubt that the thought expressed here is an important one for Kant. But what does he mean? When we came up against this question in part one when discussing step five of Kant's argument I did not take on the task of trying to spell out or explore what Kant means or is intending by saying that the real in all appearances has degrees. Here I suggest – and it is only a suggestion – that Kant's strange statement about the real always being a matter of degree is a consequence of his having confined his thinking to too limited a range of examples. In suggesting this I am in no way trying to explicate Kant's thought, only to observe that if attention is confined to a certain limited range of examples Kant's statement seems much less strange.

As well as the example of redness, which has already been discussed, Kant mentions the examples of light and darkness, heat and cold, weight and absolute lightness, and the degree of occupation of space.[109] Now a strong light is no more real than a weak light, the hotness of a stove is no more real than the coldness of snow, a column of mercury is no more real than one of hydrogen, and a ball bearing is as real as a football. We can see though how someone might say that the strong light has more *of* something real (light) than a weak light, that the hot stove has more *of* something real (heat) than snow, and so on. But with other examples such a way of speaking would be bizarre: why would anyone want to say that a low note has less of the real than a high note? Evidently, Kant was not thinking of such an example. Also, if the word "real" in Kant's pronouncements is intended to mark a contrast with what is imaginary then it is a total mystery why anyone would want to say that, for

[108] Critique of Pure Reason, At B210, B211 and B214 for example.
[109] Prolegomena §24.

example, the things in my room have, or might have, different *degrees* of reality. Evidently, Kant was not thinking of such everyday examples either.

Kant regards the AP principle as "…the second application of mathematics (*mathesis intensorium*) to natural science, the first application being the axioms of intuition[110], and indeed, as Körner notes, Kant's discussion of the AP principle anticipates the forthcoming science of psycho-physics, which was pioneered in Germany in the 19th century.

> "Kant's general principle of the anticipations of empirical perception shows us why mathematics is applicable to the measurement of sensation. Since, as Kant insists, the notion of a degree of intensity implies the possibility of its gradual and continuous increase from and decrease to zero, the mathematical theory of limits and the differential and integral calculus are particularly appropriate to the measurement of the intensity of sensation. Their use in this field has become current since the second half of the nineteenth century. Early examples of its fruitfulness are the Weber Fechner law concerning the intensity of sensation and the first steps in the economic theory of marginal utility taken by Gossen and Jervons."[111]

Having acknowledged this, I would like now, in concluding the chapter, to vindicate and develop a very interesting comment by Kant that suggests that the significance of the AP principle is much greater than this, and much greater too than what Kant goes on to say about the principle. The comment in question is this:

> "…we might very well entitle the pure determinations in space and time, in respect of shape as well as of magnitude, anticipations of appearances, since they represent *a priori* that which may always be given *a posteriori* in experience."[112]

The comment is interposed in the middle of a discussion – itself interposed between steps four and five of the argument examined in part one – of how remarkable it is that sensation, which can never be known *a priori* in regard to its quality, can be anticipated *a priori* in regard to its degree. Let us consider an example of what Kant must have in mind. Suppose we have looked at a series of rectangles where, moving from left to right, each is more square-like than the one before it. Then we may anticipate the appearance of rectangles both further to the left and further to the right than those that comprise the

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[110] Ibid.
[111] Körner, (1955) op cit. p 81.
[112] Critique of Pure Reason B209

series that we have actually seen. We can extrapolate from what we are presented with. We can also interpolate: between any two rectangles in the series we can anticipate the appearance of a rectangle intermediate in shape between the two. Instead of rectangles, other shapes could have been chosen for our given series, even, for example, the complex shapes of animals and plants, of buildings, of aircraft, and of motor cars. Kant's „interesting comment' has tremendous, indeed limitless, scope because the variety of possible shapes is limitless and because between any two shapes whatever an intermediate shape can always be found. Also, for any given shape, that of a teapot for example, we can anticipate its appearance at different *orientations* or from different *perspectives* relative to it. Furthermore, given a series where each member of the series is a spatial or temporal *arrangement* of items we can, as with shapes, add to the series by appropriate interpolations and extrapolations. (Of course, in a wide sense of the word "shape" an arrangement of things constitutes a sort of shape.)

Our ability to discern similarities and differences amongst things is not confined to the manifestly spatial or temporal. It extends both to the intensity of sensations, a fact which Kant recognizes and insists upon, and to some of their qualities, a fact which, as I tried to show in part one of this chapter, Kant overlooks. Loudness and brightness are examples of the former, pitch and smoothness of the latter.

The case of perceived colour makes an interesting contrast with both the above. Take the rainbow sequence of colours – violet, blue, green, yellow, orange and red. We see the consecutive colours of this series as more like each other than non-consecutive colours: blue is more like green than it is like yellow, for example. This suggests that we would see violet and red as more different from one another than any other pair of colours, whereas the truth is that they are less different from one another than either is from green. But if we join the sequence up into a circle – violet to red – the greater similarity of consecutive colours to each other than to non-consecutive colours rule has no exceptions. Thus far there is some parallel to the auditory dimension of pitch, although with the latter the very lowest pitches that we can hear are perceived as more different from the highest pitches that we can hear than they are from any of the intermediate pitches, so that there is no circle of pitches to

correspond to our colour-circle. But the truly significant difference between the experience of pitch from that of colour is that only with the former can we *anticipate* what it would be like to experience sensations that we have not actually experienced. Once we have heard notes of a limited range of pitches we can anticipate the whole range, whereas we cannot anticipate what colours that we have never seen would be like[113].

So, as Kant himself intimates in the comment quoted above, the anticipations of perception extend far beyond the *intensities* of different sensations. This is certainly worthy of remark. For, as Kant says when speaking merely of the anticipations of sensory intensity, "…it does indeed seem surprising that we should forestall experience, precisely in that which concerns what is only to be obtained through it, namely, its matter. Yet, none the less, such is actually the case."[114]

The considerations that have been examined suggest that there is a need to loosen and extend Kant's conception of cognitive experience as always involving the application of concepts to the raw data of sensibility. For the cognitive ability on which we depend when discerning the comparative similarities and differences amongst things is to all appearances a *pre-conceptual* ability. We do not need to have the ‚concept' of a square in order to see that an oblong all of whose sides are much the same length is less like a rectangle (and hence more like a square) than is an oblong whose adjacent sides are of very different lengths. And the same is true of limitlessly many other shapes any of which we might choose to compare. We can arrive at our concepts of triangle, circle, ellipse, polygon, parabola, etc. only because we have this similarity-discerning ability. To think that the latter depends on our having the requisite concepts, such concepts as the afore-mentioned, would be to put the cart before the horse. So at least it appears, and it would be a long argument to show that appearances here are not to be trusted.

I take it, then, that we are endowed with a pre-conceptual degree-of-similarity-discerning ability that enables us to anticipate *a priori* that which, as

[113] This may not be true in the case of non-spectral colours: we could perhaps anticipate shades of brown that we have never seen.
[114] Ibid. B209

Kant says, “may always be given *a posteriori* in experience.” The operative word here is “may”: we can anticipate *a priori* only what *may* be given to us through the raw data of sensory experience. In its application to shape and orientation, this *a priori* ability to anticipate can be thought of as a capacity for insight into geometrical relationships that does not depend, as does the formal study of geometry, on reasoning. Rather, it can, in its application to spatial relationships, be thought of as the intuitive (i.e. non-conceptual) cognitive capacity on which the formal study of geometry is founded. The same intuitive capacity, in its application to anticipations in regard to pitch, loudness and temporal relationships, can be thought of as underpinning musical creation and appreciation.

This chapter ends with some comments on the nature and scope of the ability to discern different degrees of similarity amongst things on which our anticipations of perception both in regard to spatial and temporal relationships and in regard to secondary qualities such as pitch depends. As to its scope, its range of application, even if there are spatio-temporal relationships that are too complex to serve us as empirically given starting points for any anticipations of perception, there are limitlessly many other spatio-temporal relationships any of which *could* serve us as the empirical starting points for anticipations of perception, whether through interpolation or extrapolation. Such anticipations can be manifested through imaginative productions in speech, writing, drawings, song and dance etc.

As to the nature of our ability to discern different degrees of similarity amongst things, the ability can be described formulaically as *the ability to see that something, A, is more (or less) like something else, B, than it is like a third thing, C*. Admittedly, in everyday life we often say of something that it is (or is not) like something else, without our explicitly referring to any third thing, and if one is not careful one might conclude from this that ‚degree of similarity’ is a dyadic relation. But to say of something, a rectangular table for example, that it is like another, a square table for example, is necessarily to make an implicit reference to some third thing, to some other table, actual or possible, whether hitherto seen or unseen, whose top is less like a square than is the top of the table which is being explicitly compared with the square table. ‚Degree of similarity’ is thus a triadic relation. The power of discernment on

which our ability to anticipate perception depends is a manifestation of C.S Peirce's Thirdness.

Chapter Four

The Principle of the Axioms of Intuition

The principle of the Axioms of Intuition is stated by Kant in the second edition of the Critique as follows: "All intuitions are extensive magnitudes."[115] In the first edition he states the principle as, "All appearances are, in their intuition, extensive magnitudes", which comes to the same thing. Part one of this chapter examines what Kant has to say in explication of and support for this principle, under the heading "proof". Part two then discusses how far this is relevant to Kant's schema of number and to his three categories of Quantity, namely, Unity, Plurality and Totality.[116] In part three an attempt is made to show that, in the light of the foregoing, certain distinctive kinds of cognitive syntheses are constitutive of experience insofar as it involves the mindful employment of categories of Quantity.

1) Kant's Argument for the Principle of the Axioms of Intuition

Kant presents two substantially equivalent statements of what he calls his proof, in the first two paragraphs respectively, under the heading "Axioms of Intuition".[117] I will examine here Kant's first statement of his proof because, despite some difficulties in its interpretation, it is the more detailed. This statement of his proof may be considered to comprise six steps, each expressed in a single sentence. The conclusion is stated at step five, and steps one, two and six state Kant's premises. Steps three and four are best seen as helping to explain step two. In the examination of Kant's proof I will take account, where it is called for, of the Transcendental Aesthetic. Indeed, Kant's proof may be regarded as an attempt to show how space as a form of intuition and space as formal intuition are related. As far as the central developing

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[115] Ibid. B 202.

[116] The category of Unity is associated with judgments relating to something where that something is conceived of as a *single* thing, person, entity, process, etc. The category of Plurality is associated with judgments relating to *more than one* of something. And the category of Totality is associated with judgments relating to *all* the things, persons, entities, processes, etc. that fall under some description or other. Disconcertingly, Kant correlates the category of Unity with universal judgments and the category of Totality with singular judgments. I agree with Henry Allison that, "It seems obvious that these correlations should be reversed." See Allison, (1983) op. cit. p. 350, n.33.

[117] Critique of Pure Reason B 202-204.

theme of this thesis is concerned, though, the main significance of Kant's proof is that it provides many illustrations of what Kant means by "synthesis".

> Step One: "Appearances, in there formal aspect, contain an intuition is space and time, which conditions them, one and all, *a priori*."[118]

This is a summary statement of the main conclusion of Kant's Transcendental Aesthetic: space and time are the two forms of intuition which are presupposed by all appearances as received by us through sensibility. It would take us too far afield to discuss the relevant arguments – especially at B39 and B46 – of the Transcendental Aesthetic, so I will simply accept step one as a given.[119]

> Step Two: "They (i.e. appearances) cannot be apprehended, that is, taken up into empirical consciousness, save through that synthesis of the manifold whereby the representations of a determinate space or time are generated, that is through combination of the homogeneous manifold and consciousness of its synthetic unity.

To understand this we first have to understand what it means to say that an *appearance* has been apprehended, i.e. taken up into empirical consciousness. It is reasonable to assume that to speak of appearances is to speak of what we are aware of through our various faculties of sensibility prescinding completely from any meaning that what we are aware of might have for us or from any ideas that what we are aware of might prompt us to have. There may or may not be anything objective „corresponding' to an appearance but insofar as we are speaking just of appearances the question of objectivity does not arise. It is also reasonable to assume that "apprehend" means something like „be aware of'. Can Kant mean then to speak of appearances as being apprehended? For if our words are to mean what they ordinarily mean it is analytically true that any appearance whatsoever is *already* apprehended, and

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[118] Ibid. B 202.

[119] P.F. Strawson has pursued the question of whether cognitive experience would be possible for a being that lacked any experience or conception of space, his purpose being to illuminate our actual cognitive experience – which is undoubtedly of a *special* world. He imagines a being whose world comprises nothing but sounds, and in trying to present a coherent account of this imaginary being's cognitive experience he finds himself having to introduce what he takes to be auditory analogues, eg. recurring master-sounds, of things with various properties, such as are a matter of course in our spatial world. See Strawson, P.F., Individuals (1959) pp. 50-80.

to speak of an appearance that has *not* been apprehended would be a contradiction in terms. The reasonable presumption, surely, is that what appears to us is *ipso facto* apprehended by us. Yet the wording of step two requires that a distinction be made between appearances *before* and appearances *after* they have been apprehended. I am obliged to conclude, therefore, that Kant must be using the word "appearance" in a sense different from the ordinary sense. What then is this different sense of the word "appearance"? The following account is suggested as best fitting the requirements of Kant's philosophical system as set out in the Critique.

That which is presented to us through the pure receptivity of sensibility are appearances – in this special Kantian sense. But we are not necessarily *aware* of appearances in this sense. Only when they have been apprehended through the agency of our cognitive faculty of pure spontaneity are we aware of them. This latter faculty may be called "the understanding", as indeed it is often called by Kant, although this is somewhat misleading because our apprehension of appearances – in Kant's special sense – need not involve our *understanding* anything about what we apprehend, it need only involve our being *aware* of the latter. On this interpretation the apprehension of appearances is not effected through sensibility alone; it requires a *meeting*, so to speak, between what is presented to us through sensibility and the productions of the cognitive faculty of pure spontaneity. It is generally agreed that, for Kant, any *cognitive* experience, i.e. any experience that involves our knowing something or thinking that we know something, is always and necessarily the outcome of the workings of our faculty of pure receptivity (our sensibility) and of our faculty of pure spontaneity, jointly. My suggestion is that really Kant is committed to a broader claim: that any experience *whatsoever* – in that it involves the apprehension of something – is always and necessarily the outcome of the workings of our faculty of pure receptivity and of our faculty of pure spontaneity, jointly.

On the above interpretation we can understand step two of Kant's proof to be stating that the work of the faculty of spontaneity consists of the bringing together of homogeneous units of what is presented to us by sensibility, both at any given moment and at successive moments, as being the same, so that we become aware of the synthesised product resulting therefrom.

Hereby, appearances are apprehended both as spread out in space and as *enduring*. Or, in Kant's words, hereby "the representations of a determinate space or time are generated." The appearance to me of the manifold things on my desk would thus require synthetic activity within each zone of homogeneity that is before me in order to generate determinate representations of the spatial characteristics of each such zone and of their mutual relations. This is in accordance with Kant's general characterisation of what he means by "synthesis", namely, "the act of putting different representations together, and of grasping what is manifold in them in one [act of] knowledge." [B103] When Kant speaks of the *manifold* of sensibility he is speaking of the multifariousness of perceptual experience, its amazing richness; when, on the other hand, he speaks of the *homogeneous* he is speaking both of the sameness which characterises the passage experienced from one moment to the next, which he holds to be crucial for our understanding of the extensiveness of time, and of the sameness within different parts of what is presented to us through sensibility at a given moment, which he holds to be crucial for our understanding of the extensiveness of space.

Such, essentially, is Kant's meaning when, in step two, he speaks of "the homogeneous manifold" – a verbal contradiction only – through whose combination representations of a determinate space and time are generated provided that the person concerned is thereby conscious of the resulting unifiedness. It may help in understanding what Kant means by "combination" here – he usually speaks of synthesis – by noting what he says about the synthesis of apprehension in intuition and about the synthesis of reproduction in imagination at A99 and A102 respectively.

> "Every intuition contains in itself a manifold which can be represented as a manifold only in so far as the mind distinguishes the time in the sequence of one impression upon another; for each representation, *in so far as it is contained in a single moment*, can never be anything but absolute unity. In order that unity of intuition may arise out of this manifold (as is required in the representation of space) it must first be run through, and held together. This act I name the *synthesis of apprehension*, because it is directed immediately upon intuition, which does indeed offer a manifold, but a manifold which can never be represented as a manifold, and as contained in a single representation, save in virtue of such a synthesis." [A99]

This is in keeping with what was suggested earlier about how the word ‚appearances' has to be understood in Kant's proffered proof of the principle of the axioms of intuition. Without the synthesis of apprehension, that which is presented to us through sensibility is not apprehended and hence is nothing to us: it is appearance in name only until it has been dealt with by the synthesis of apprehension. And it is only through the same synthesis that we become aware of (through ourselves generating) space and time. Space and time as forms of intuition are nothing to us until they have been apprehended through the same synthesis.

Kant goes on to speak of the synthesis of reproductive imagination. In doing so he is not referring to something *other* than the synthesis of apprehension; he is simply referring to part of what he holds the synthesis of apprehension necessarily to involve.

> "…we must assume a pure transcendental synthesis of imagination. …When I seek to draw a line in thought, or to think of the time from one noon to another, or even to represent to myself some particular number, obviously the various manifold representations that are involved must be apprehended by me in thought one after the other. But if I were always to drop out of thought the preceding representations (the first parts of the line, the antecedent parts of the time period, or the units in the order represented), and did not reproduce them while advancing to those that follow, a complete representation would never be obtained: none of the above-mentioned thoughts, not even the purest and most elementary representations of space and time, could arise.
>
> The synthesis of apprehension is thus inseparably bound up with the synthesis of reproduction."[A102]

In his proof of the principle of the axioms of intuition Kant is concerned with our apprehension of how appearances are spread out in space and time (duration), and the synthesis he speaks of here is therefore the synthesis of apprehension which, as explained in the above passage, Kant holds necessarily to involve the synthesis of reproductive imagination. Kant speaks above of *drawing* a line in thought and of *thinking* of a period of time but he could have chosen the far more elementary example of seeing a line and apprehending it as the same over successive instants.

In the light of the above considerations I will now address the question of whether what Kant says about space and time in the Transcendental Aesthetic is consistent with what he says in his proof of the principle of the Axioms of Intuition. For, as Henry Allison observes, there appears to be an

inconsistency between Kant's claim in the Transcendental Aesthetic, "that space and time are given as infinite" and his claim in his proof of the principle of the Axioms of Intuition, "that space can only be represented by means of successive synthesis."[120]

At B40 Kant says that, "Space is represented as an infinite *given* magnitude", and at B48 he says that,

> "The infinitude of time signifies nothing more than that every determinate magnitude of time is possible only through limitations of one single time that underlies it. The original representation, *time*, must therefore be given as unlimited."

Yet in his proof of the principle of the axioms of intuition Kant says that space and time can only be apprehended "through that synthesis of the manifold whereby the representations of a determinate space or time are generated." So how can one and the same magnitude – whether space or time – be both something infinite that is given to us yet also something that we can only apprehend "through successive synthesis of part to part"[B204]? Henry Allison provides the following answer:[121] We need to make a distinction between *indeterminate* and *determinate* intuitions of space and of time. The former are intuitions that are the result of nothing but the pure receptivity of our faculties of sensibility, whereas the latter are the result of purely spontaneous synthetic activity *on* our indeterminate intuitions. The Transcendental Aesthetic is concerned with space and time as indeterminate intuitions, whereas the Transcendental Analytic, insofar as it is concerned with space and time, is concerned with them as determinate intuitions. Thus there is no inconsistency between Kant's claim in the Transcendental Aesthetic passages B40 and B48 that space and time are infinite given magnitudes and his claim in his proof of the principle of the Axioms of Intuition that space and time are only apprehended through successive syntheses. He is speaking of different things, of indeterminate and of determinate intuitions, respectively.

This, I would agree, is a succinct statement of Kant's account of how space and time as forms of intuition are related to space and time as cognitively grasped. But a difficulty still remains. For how are we supposed to

[120] Allison, (1983) op. cit. p. 94.
[121] Ibid. pp. 95-96. See also pp. 67-68.

be able to know that Kant's claims at B40 and B48 in the Transcendental Aesthetic are true? How are we supposed to be able to know that the space and time which we intuit are both limitless in extent? For we are faced with the task of getting a cognitive grasp of the *infinitude* of space and time yet our only cognitive means available for judging the matter according to Kant are the carrying out of successive syntheses of *finite* portions of space or time. This suggests either that we do not have the kind of insight into the infinitude of space and time that Kant thinks we have – a conclusion that I would not want to accept – or that there is something wrong with Kant's account of our cognitive faculties.

> Step Three: "Consciousness of the synthetic unity of the manifold [and] homogeneous in intuition in general, in so far as the representation of an object first becomes possible by means of it, is, however, the concept of a magnitude (quantum)"

It seems very odd to say that the consciousness of something is the *concept* of a magnitude. Kant speaks as he does, I suggest, simply because of his transcendental idealism; for according to Kant space and time *are* nothing other than attributes of our consciousness.

More troublesome is the odd conjunction of the words, "manifold [and] homogeneous". From what has already been said there should not be any doubt as to what Kant means, although it is undoubtedly difficult to state, especially to state at all succinctly. What he means may be put as follows. Appearances – most of them anyway – are multifarious in the extreme yet if we are to apprehend them – to become aware of them – there must be two distinct kinds of sameness about them. First and foremost they must be the same from one instant to another; thereby, through the synthesis of the reproductive imagination across these ‚homogeneous' instants, we apprehend duration and thus ‚generate' time. Secondly, the appearances must also according to Kant – though he says much less about this and not surprisingly in view of the difficulty of doing so – have homogeneous *parts*, parts the homogeneity of which we can only apprehend though through a successive synthesis, again a synthesis of the reproductive imagination, of the sub-parts of each homogeneous part to each other; thereby we apprehend the spatial

character of appearances, this being integral to our ‚generation' of space. The time and space hereby generated are *magnitudes* just because they are the outcome of successive synthetic ‚acts'.

The wording of step three might therefore be amended as follows: Consciousness of the synthetic unity of that which is homogeneous in the manifold of intuition, viz. its homogeneity from instant to instant and within its different parts, in so far as the representation of an object first becomes possible by means of it, is, however, the concept of a magnitude. With this further step, I suggest, Kant is merely explicating what he had already said in step two.

> Step Four: "Thus even the perception of an object, as appearance, is only possible through the same synthetic unity of the manifold of the given sensible intuition as that whereby the unity of the combination of the manifold [and] homogeneous is thought in the concept of a *magnitude*."

In other words, a precondition of our apprehending what is presented to us through sensibility, and thus of our being aware of it even as appearance, is that what is multifarious in what is given to us in sensibility be synthesised into the same unity (in virtue of its having been mentally grasped) as what is homogeneous (in the sense explained above) in it, the synthesisability of the latter *constituting* it as a magnitude. There are really two separate thoughts here. First, there is the thought that the apprehension of appearances requires a synthesis of what is given in the manifold of sensibility that encompasses both what is multifarious and what is homogeneous in this manifold, the synthesis with respect to the latter rendering determinate for us the indeterminate forms of intuition, space and time. Kant explicitly states at the end of his proof that, "As intuitions in space and time, they (i.e. appearances) must be represented through the same synthesis whereby space and time in general are determined." The second thought, which leads on to the last step (step five) of his proof, is that Kant explicates what he means by the term "magnitude" as that which appears to us as the result of the synthesis of that which is homogeneous in the manifold of sensibility.

> Step Five: "In other words, appearances are all without exception *magnitudes*, indeed *extensive magnitudes*."

With this step of his proof I believe that Kant simply restates the principle of the axioms of intuition in different words. Does it follow from steps one to four? It does not. All that follows, if steps one to four are accepted, is that without exception all appearances have both a spatial magnitude and a temporal magnitude. There has as yet been no attempt to show that these magnitudes are *extensive* magnitudes. However Kant goes on to *define* an extensive magnitude as one whose representation in an appearance is a result of the successive synthesis of homogeneous parts of that appearance.

> Step Six: "I entitle a magnitude as extensive when the representation of the parts makes possible, and therefore necessarily precedes, the representation of the whole."

Kant's proof is now complete. Kant has presented us with a stipulative definition of what constitutes a magnitude as extensive given which, if steps one to four are accepted, his conclusion already stated at step five follows. Kant has so tailored his definition as to make this analytically true. His definition is a highly theoretical one because it presupposes the truth of all that has been said at steps two, three and four about the essential role of the synthetic activity of the mind even in apprehending appearances. Of course, we understand the word "extensive", together with the complementary "intensive", in an everyday (pre-theoretical) sense perfectly well, and in the discussion of the Anticipations of Perception in the previous chapter it was not necessary to go beyond the ordinary everyday sense of "intensive" when speaking of intensive magnitudes. But things are now different. From now on the pair of complementary terms "extensive" and "intensive" have to be understood in a sense that is heavily laden with theory, viz. Kant's theory of cognitive synthesis, as discussed at steps two, three and four of his proof of the principle of the axioms of intuition. Thus theory-laden, a magnitude is extensive if and only if the apprehension of an instance of it proceeds through a successive synthesis from the instance's homogeneous parts to the whole, whereas a magnitude is intensive if and only if the apprehension of an instance of it "takes place in an instant and not through successive synthesis of different sensations, and therefore does not proceed from the parts to the

whole."[B210] According to Kant the spatial and temporal magnitudes of things are extensive magnitudes as thus defined.

There is, however, a complication. In a footnote – marked "q" – to B202 Kant distinguishes two kinds of synthesis, namely, that of *aggregation*, which applies to extensive magnitudes as already described, and that of *coalition*, which applies to intensive magnitudes. This flatly contradicts what Kant says at B210 – the passage from the Anticipations of Perception quoted above. Kant does not go on to describe what the synthesis of coalition consists in and how it differs from the synthesis of aggregation, nor – so far as I know – does he do so elsewhere. We can understand why Kant should want there to be some sort of a synthesis pertaining to intensive magnitudes; for otherwise the intensive magnitudes of things would be left out on a limb as the only attributes of things that we can cognitively grasp *without* any prior successive synthesis. The trouble for Kant is that to speak of synthesis is *ipso facto* to speak of the adding of part to part to make a whole and in the case of intensive magnitudes this makes no evident sense and it is difficult to see how it could be *given* any sense, i.e. how it could make sense to speak of the *parts* of an instance of intensive magnitude such as brightness.[122]

After giving, at step six, his theory-laden definition of what it is for a magnitude to be extensive Kant tries to vindicate his definition by citing some observations to illustrate what he means by saying that with extensive magnitudes, "the representation of the parts makes possible, and therefore necessarily precedes, the representation of the whole."

> "I cannot represent to myself a line, however small, without drawing it in thought, that is, generating from a point all its points one after another. Only in this way can the intuition be obtained. Similarly with all times, however small. In these I think to myself only that successive advance from one moment to another, whereby through the parts of time and their addition a determinate time-magnitude is generated."

[122] Jonathon Bennett criticises Kant for simply defining intensive magnitudes as magnitudes that are *not* extensive, i.e. not such that they consist of parts that can be added together to make a greater magnitude. Bennett says that "…one would like to be able to improve upon it;" Bennett, op. cit. p. 101. On the contrary, I think Kant's distinction is a well-founded one – a given temperature, for example, does not consist of any *parts* added together, so it is an intensive magnitude, unlike any given length, for example, which does consist of sub-lengths which, when added together, yield the given length. The trouble for Kant is that intensive magnitudes in this sense are not – on the face of it – amenable to cognitive synthesis as Kant understands it.

But these observations simply reflect the peculiarities of Kant's imagery. It would not have been known to Kant, but it is now known that there are enormous individual differences in people's mental imagery.[123] I find it quite easy to imagine a line ‚all at once' without drawing it in my mind part by part (and I would be surprised if the reader could not do the same.) The passage just quoted prompts the question of what facts of psychology are relevant to Kant's Critique of Pure Reason, in particular to his account of cognitive synthesis. This is a question that I will be engaged with later in the chapter.

Kant's proof of the principle of the axioms of intuition presupposes his transcendental idealism. This is very obvious at step six, where he defines a magnitude as extensive "when the *representation* of the parts makes possible… the *representation* of the whole" (my italics). For whatever exactly Kant means by the word "representation" it is something mental, something that pertains only to sentient beings. So, Kant is committed to defining what we mean by the sizes of things – of this desk for example – in terms of our experiences – our *experience* of the desk in this example – and one might well baulk at the prospect: I can accurately measure the length, breadth and height of the desk and so can you but neither of us can accurately measure anything that could conceivably correspond to my ‚representation' of the desk. There is indeed an ‚extensiveness' – using the word in a generous sense – to much of our experience: the desk takes up a good deal of my visual field when I am sitting by it, much less when I am across the room, and if I pause from my work and stare down at the desk my experience of the latter *endures* for as long as I choose it to. But our *experiences* of spatial or of temporal extensiveness are not *accurately* measurable, if they are measurable at all. So to define extensiveness in terms of our experiences of extensive things would again seem to put the cart before the horse. Here we have a difficulty for Kant's transcendental idealism. It is of course precisely his transcendental idealism that enables Kant to explain the *a priori* insights that he holds that we have into space and time. Although many people today would deny or doubt

[123] A classic study of this was conducted by Francis Galton. See Galton, F., Inquiries into Human Faculty and Its Development (1907), first published 1883, pp. 57-105. (Francis Galton was Charles Darwin's cousin.)

that we have any such insights, I am not one of them.[124] There are profound unresolved issues here, though to pursue them now would again take me too far from my main concern.

2) The Axioms of Intuition, the Schema of Number and the Categories of Quantity

What *are* the Axioms of Intuition? Stephen Körner maintains that Kant does not give any examples of them, and he (Körner) suggests "that these axioms themselves, as opposed to their principle, are the judgements which permit application of specific mathematical propositions to perception."[125] Körner does not give any examples of such judgments, which is unfortunate because it is surely odd to speak of axioms as *judgments*. But in any case I think that Kant *does* give examples of the axioms of intuition (although I naturally have misgivings over disagreeing with an eminent Kantian scholar about such an elementary matter.) The following paragraph, which comes immediately after Kant's second statement of his proof, is pertinent here.

> "The mathematics of space (geometry) is based upon this successive synthesis of the productive imagination in the generation of figures. This is the basis of the axioms which formulate the conditions of sensible *a priori* intuition under which alone the schema of a pure concept of outer appearance can arise – for instance, that between two points only one straight line is possible, or that two straight lines cannot enclose a space, etc. These are the axioms which strictly relate only to magnitudes (*quanta*) as such."[B204]

From this I take it that Kant has just given us two examples of axioms of intuition, namely, the two geometrical axioms that he mentions *so understood as being applicable a priori to appearances and hence to the empirical world*.

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[124] That mathematicians have devised non-Euclidean geometries and geometries of more than three dimensions is entirely irrelevant to Kant's philosophy of space and time. For the former are simply self-contained systems of axioms and their analytically derivable theorems that are, so far as we know, free of any inconsistencies. That such systems have been devised since Kant's day does not show that Euclidean geometry is nothing more than such a system. See R.P. Wolff, Kant's Theory of Mental Activity, (1962), p. 231. Also, the non-Euclidean nature of space-time in the theory of general relativity would only seriously impugn Kant's philosophy of space and time if no theory that accepted an essentially Kantian view of space and time could do as well in its predictions as this non-Euclidean based theory, and on this point there is, I think, room for doubt. However, as Robert Hanna notes, "Very few contemporary philosophers – including Kant scholars who are otherwise very sympathetic to transcendental idealism – are willing to defend [Kant's thesis that space is necessarily three-dimensional and Euclidean]". Hanna himself is one of the exceptions. See R. Hanna, Kant and the Foundations of Analytic Philosophy (2001), pp. 270-279.

[125] Körner, op. cit. pp. 80-81.

For Kant, that between two points only one straight line is possible and that two straight lines cannot enclose a space are not merely analytic statements of pure mathematics whose applicability to the real world has to be ascertained through empirical investigation. Rather, their applicability to the real world is guaranteed *a priori*. So understood they *are* axioms of intuition. To deny this, as by implication Körner does, would leave us in the dark as to what the axioms of intuition are in regard to the spatial attributes of appearances. Textual support for this interpretation comes from the following remarks from B 206.

> "This transcendental principle of the mathematics of appearances greatly enlarges our *a priori* knowledge. For it alone can make pure mathematics, in its complete precision, applicable to objects of experience."
>
> "What geometry asserts of pure intuition is therefore undeniably valid of empirical intuition."

Kant does not, I would agree, give any examples of axioms of intuition in regard to the temporal attributes of appearances, but, on analogy with the case of geometrical axioms whose empirical applicability is guaranteed *a priori*, I suggest the following: if A has preceded B and B has preceded C then A has preceded C.

According to Körner the importance of the principle of the Axioms of Intuition, "lies in the fact that it constitutes Kant's explanation of why mathematics is applicable to experience and why in particular mathematical physics is possible."[126] That the principle is of interest for other reasons I am in the course of trying to show, but I agree that the first part of what Körner says is true. For the principle encapsulates Kant's explanation of why mathematics is applicable to the extensiveness of things in space and time – their sizes and durations, etc. The second part of what Körner says though is surely not true: the principle of the Axioms of Intuition does not explain why mathematical physics is possible. This is because the extensive magnitudes that the principle speaks of are of space and time only. All the other magnitudes that physicists are concerned with, such as mass, energy, force and electric charge, fall outside its scope. The only part of physics that the

[126] Ibid. p. 80.

principle of the axioms of intuition is relevant to is *kinematics*, i.e. the study of the motion of bodies where, in contrast to *dynamics*, the masses, forces or energies involved are disregarded.

The chief interest, it seems, of the principle of the Axioms of Intuition lies in the question of its place in Kant's account of our cognitive faculties as set out in his first Critique, and in particular of its connection with Kant's schema of number and with his three categories of Quantity. In addressing this question I will begin with the little that Kant himself says about it.

> "…the pure *schema* of a magnitude (*quantitatis*), as a concept of the understanding, is *number*, a representation which comprises the successive addition of homogeneous units. Number is therefore simply the unity of the synthesis of the manifold of a homogeneous intuition in general, a unity due to my generating time itself in the apprehension of the intuition."[B182]

Here Kant anticipates much of what he says in his proof of the principle of the Axioms of Intuition. We are to suppose that in the apprehension of any appearance the appearance apprehended is necessarily the outcome of a synthesis carried out by the faculty of pure spontaneity, here manifesting itself as a synthesis of the reproductive imagination; the synthesis joins together successive homogeneous offerings from the purely receptive faculty of sensibility, thereby generating the experience of the appearance's duration, and it joins together (again successively) adjacent homogeneous offerings from the sensibility, thereby generating the experience of the spatial extent of the appearance. The synthesis in regard both to the duration and to the spatial extent of an appearance "comprises", therefore, "the successive addition of homogeneous units", and the idea of such successive addition *is*, according to Kant, the representation of number, a representation that he calls a "schema".

This is as far as Kant's account of the connection between his theory of cognitive synthesis and the schema of number goes. Neither here, nor anywhere else so far as I have ascertained, does he explain the connection between the three categories of Quantity – Unity, Plurality and Totality – and the above picture of how cognitive synthesis involves the schema of number. Kant may have thought that the connection is so obvious as not to require discussion. For surely, it might be said, the successive addition of homogeneous units implies that there are *units* to be added and hence the

category of Unity, the fact that more than *one* unit is involved implicates the category of Plurality, whilst the *completion* of the cognitive synthesis in the resulting appearance implicates the category of Totality. And I would certainly agree that if this is *not* what Kant has in mind then we are left in the dark as to how the categories of Quantity, the schema of number and the principle of the Axioms of Intuition are supposed to be related to each other.

But there is a serious difficulty with the above suggestion. For Kant's phrase, "the successive addition of homogeneous units", implies that the task of cognitive synthesis is one of adding together discrete units – of time or space – to make an aggregate total, whereas Kant has never even hinted that we should think of the duration or the spatial extent of appearances in this way; on the contrary, like everyone else he always speaks of the duration and the spatial extent of appearances as *continuous* quantities, i.e. as continua, and continua are magnitudes that are not made up of units, and therefore not such as to be amenable to the cognitive synthesis involving *the addition of units* that Kant describes. Or at least, continua, such as the durations and the spatial extents of appearances, are not amenable to the kind of synthesis Kant describes unless we construe the units to be summed up as infinitesimals that are to be summed using – or as if using – the integral calculus, an interpretation that Kant himself, so far as I know, never considers.

The integral calculus does presuppose the ideas of unity, plurality and totality, so it might be suggested that, *indirectly*, a cognitive synthesis that worked as if using the integral calculus would implicate the three categories of Quantity in any apprehension of appearances. The trouble with this suggestion, though, is that it would confine the range of application of these categories far too narrowly, viz. to the actual workings of the cognitive synthesising activity of the reproductive imagination itself. This is far from being in accordance with Kant's intentions: Kant holds that the categories of Quantity, like the other categories, apply to all the offerings of sensibility not just to the reproductive imagination in its synthesising work *on* the offerings. The following paragraph identifies the limitation.

> "Synthesis in general… is the mere result of the power of imagination, a blind but indispensable function of the soul, without which we should have no knowledge whatsoever, but of which we are scarcely ever conscious. To

> bring this synthesis *to concepts* is a function which belongs to the understanding, and it is through this function of the understanding that we first obtain knowledge properly so called." [B103]

From this it can be seen that Kant's proof of the principle of the Axioms of Intuition pertains only to the synthesis of the (reproductive) imagination, so that at best the proof could only show that the categories of Quantity are applied blindly, in a "scarcely ever conscious" way, to appearances, leaving in question their conscious and mindful application to appearances: even such an elementary experience as seeing that there are *several* roses in bloom along the fence – where the category of Plurality is involved – falls outside the scope of Kant's proof. In the passage just quoted Kant speaks of a function of the understanding and this would have to be invoked to bring the example within the scope of Kant's account of the categories. At best, Kant's proof of the principle of the Axioms of Intuition would need to be supplemented by some premise concerning this function of understanding before the *universality* of the scope of the categories of Quantity could be deduced.

In the foregoing a number of difficult questions have been set aside. What is a schema? Why are they needed? How are the schemata related to their corresponding categories and principles? Such questions, which Kant found "dry and tedious,"[B181] have been pursued in a recent study by Douglas Burnham.[127]

3) Categories of Quantity, Space and Time, and Cognitive Synthesis

I will speak here of ‚categories of quantity' – without the definite article – to mark a degree of disengagement from the systematic account given by Kant of his categories of Quantity. Kant distinguishes sharply between the schema of number and the categories of Quantity, whereas I will lump all these together under the rubric ‚categories of quantity'. But I will follow Kant in taking judgments involving the logic of quantification as the starting point. Here are some examples of such judgments: there are *three* sheep in the field, *all* the books on the table are paper-backs, *several* dogs were barking, and,

[127] D. Burnham, Kant's Philosophies of Judgment (2004) pp. 86-89, 167-173. Burnham introduces the interesting idea of ‚schematising without a concept', which ‚is possible because free sensible lawfulness can be felt, and the ability to feel it is a universal though subjective condition of any cognition." p. 172.

only one of the lakes had dried up. Like Kant in the Transcendental Analytic, I will not be concerned with the logic of quantification as such but with the conditions of its application to our empirical experience of the world. The enquiry will address the following question: what sort (or sorts) of cognitive grasp of space and time is (are) required in order for us to have experience whose cognitive content can be expressed in judgments involving the concepts of the logic of quantification?

Suppose, then, that a being has a cognitive grasp of some matter that could be expressed in a judgment that involves the use of the concept of number or of the concepts of the logic of quantification – ‚any', ‚every', ‚all', ‚a plurality', etc. (The reason for this third-person way of putting it will become apparent as the enquiry proceeds.) What does such a ‚cognitive grasp' – of the fact, for example, that there are *several* rocks near the tree – presuppose concerning the fact that what is cognitively grasped is something in space and time? The question shows that the enquiry will proceed in the opposite direction to Kant's in his proof of the principle of the Axioms of Intuition, for there Kant tries to infer the necessary involvement of the categories of Quantity in empirical experience from his theory-laden analysis of our apprehension of the spatial and temporal in appearances.

It does admittedly sound odd to say that one has a *cognitive grasp* of the fact that there are several rocks nearby. It sounds about as odd as to say, as Kant would have, that one *judges* this to be so, when, for example, the fact is obvious at a glance. I do not, however, think that we need worry about being led philosophically astray here provided that we are aware that because of the difficulty of speaking about what is ubiquitous about the role of understanding in our daily lives we are obliged to bend the ordinary use of language somewhat. So, what does such a ‚cognitive grasping' or ‚judgment' regarding the quantity of what is cognitively grasped or judged presuppose? Obviously, it presupposes that one has a cognitive grasp of whatever it is that one is judging to be present in some quantity – of rocks, in this example. One cannot judge there to be several rocks nearby unless one can judge when what is nearby is a rock and when it is not. The point is so obvious as scarcely to seem worth saying. But it is important keep a grip on this obvious thought. There are, of course, an indefinite multitude of possible examples. For we can make

judgments of quantity in regard to an indefinite multitude of things – to houses, windows, gardens, asteroids, rivers and cities, for example. Evidently, judgments of quantity presuppose that one can identify different *kinds* of things. More exactly, they presuppose that one can identify different kinds of things on particular occasions. A person who claimed to have a concept of a river just because he had a vivid image of the upper Nile would need to be told that this is not the point, and that for him to have the concept of a river he would have to be able to identify rivers when he comes across them or from photographs or descriptions of them. Again, what is being ‚claimed' is so obvious as scarcely to seem worth saying. The application of *categories* of quantity to empirical experience presupposes an *empirical* intelligence or understanding, viz. that one can distinguish between different kinds of things, things that we can only know of through experience.

But how are space and time involved in one's identifying, on different occasions, different things as being of the same kind? Again, the answer in general terms is obvious. To speak of different occasions is to speak of different places and times, and to speak of different things as being of the same kind is to speak of things that, although separated in space or time, are yet sufficiently similar in relevant respects to be treated as being of the same kind. Normally, when one identifies something as being a certain kind of thing – a cup, for example – one does not consciously bring to mind one's past experiences of that kind of thing – of cups – and then judge that the thing before one is sufficiently similar in relevant respects to the things thus experienced on these previous occasions for it to go by the same name – cup. Nonetheless, normally, one's perception of what is currently before one is, so to speak, *informed* by some at least of such of one's past experiences as are relevant to what is currently before one. This is the mind's routine *modus operandi*. It may indeed be spoken of as a sort of ‚synthesis': the bringing to bear on one's present experience of some ‚residue' of one's relevant past experiences. Such a synthesis is *constitutive* of cognitive empirical experience: to speak of cognitive empirical experience whilst denying or doubting that there is such a ‚synthesis' would be to speak without sense. The above statement, then, is not a hypothesis of cognitive psychology. Rather, it defines part of the field that cognitive psychology has to address.

That judgments involving categories of quantity presuppose the identification of different occurrences in space and time of things of the same kind, which identifications involve our cognitively grasping that the things so identified are sufficiently similar in relevant respects to previously experienced things to go by the same name, might seem to be a (philosophical) truism. If so then it is a truism that prompts some questions. First, does the identification of different occurrences in space and time of things of the same kind necessarily involve the application of categories of quantity? Second, is there anything else in general that judgments involving categories of quantity presuppose apart from the identification of different occurrences in space and time of things of the same kind? The addressing of these questions will occupy the remainder of this chapter.

On the face of it the relationship between identifying particular things as being of the same kind and applying categories of quantity to what we experience appears to be a reciprocal one. For given any *one* kind of thing there are necessarily *many* possible particular things of this kind. In the old language of universals and particulars empirical cognition of its very nature involves the bringing of particulars under universals, and for any given universal there are always open-endedly many possible particulars that fall under it, that instantiate it. With this thought in mind Kant's conviction that the categories of Quantity are involved in all empirical cognition is very understandable, as is his assigning the categories of Quantity first place in his table. And it is surely evident that insofar as particular things *can* be brought under universals they *could* be counted and thus brought under the categories of Quantity. But a serious ambiguity looms here and a distinction needs to be drawn to remove it.

An example is called for to illustrate how there can be cognitive experience in the sense that particulars are brought under universals, notwithstanding that the being concerned is quite unable to count and has no conception of ‚all' or ‚some' etc. The example is imaginary but is based on common knowledge of the cognitive powers of non-human animals and human infants. A parent bird of one of the least intelligent species is the

subject.[128] The parent bird has two eggs in its nest which it is incubating. This behaviour certainly requires the bird to have cognitive experience: it knows where its nest is located, and it can tell the difference between its own eggs and other things such as round stones, Easter eggs and eggs of birds of other species, and so on. Whilst the bird is away from the nest looking for food we take one of its eggs out of the nest or add to its clutch another egg of the same species of bird. We wait to see how the parent bird behaves upon its return to the nest. To our surprise it behaves no differently to how it has behaved upon its return to the nest on earlier occasions. It incubates the single egg – or the three – just as it had previously incubated the two. The bird gives no indication that it has noticed any change. And I am supposing that indeed it has *not* noticed any change. The *number* of its eggs means nothing to it. All that matters as far as the bird is concerned is that the nest contains at least one egg. It could hardly be *proved* that there is nothing incoherent about this example. I simply ask the reader to imagine the case and to try to find anything incoherent about it.[129]

From this example (and many more could be imagined) it is reasonable to conclude that cognitive experience does not require the actual *application* of categories of quantity to what is experienced. But the example does not show that categories of quantity are not *applicable* to that which is cognitively experienced. Here is the distinction that is needed. The example leaves the already acknowledged internal connection between 1) universals and the particulars that fall under them and 2) number, untouched, for although the categories of quantity play no part in the *bird's* cognitive experience these categories are certainly applicable – and necessarily applicable – to the circumstances as I have just described them of the bird's being tricked into its

[128] The bird, then, is certainly not a member of the crow or parrot families. Perhaps there is, as a matter of fact, no bird that is as blind to the conception of quantity as I am supposing. If so then this should not be taken to detract from the force of my example. For I am simply trying to show that there is nothing incoherent in the idea of a being having cognitive experience of something without its having any cognitive grasp of number, plurality or totality etc.

[129] It is no objection to the example that it is an example from *animal* behaviour, for any general inquiry into the cognitive preconditions of cognitive experience should be applicable to cognitive experience as such, whether in human beings or in animals.

incubating fewer or more eggs than before without its realising that there has been a change.[130]

It may be difficult in the example of the enumerate bird to conceive how such utter innumeracy is possible. It is difficult to set aside our own numeracy, to think it away, so to speak. The bird can identify different occurrences of eggs as the same in their eggishness, yet this does not suffice for it to have any notion of quantity in regard to eggs. Is there perhaps some other capability, essential for the application of categories of quantity, which *it* lacks and which *we* can identify? There is. The imagined bird lacks, whereas we do not, a cognitive grasp of many kinds of spatial and temporal relations. The application of categories of quantity not only requires the identification of different occurrences in space and time of things of the same kind – which the bird is capable of – it also requires a sufficiently good cognitive grasp *of how things of the same kind are related to one another as well as to other things in space and time*. This, in very general terms, is an answer to the second question that was asked above. The answer calls for further explanation and discussion.

For the parent bird in the example to be able to grasp the fact that an egg has been taken away from – or added to – the clutch of eggs it is incubating it would have to be able to grasp the fact that ‚eggishness' is located at two places within its nest – to the left and to the right of one of the feathers that lines its nest, for example. This information is available, so to speak, at the bird's eyes but the bird is unable to grasp it cognitively and so although it has cognitive experience of ‚eggishness being present' it has none concerning the *number* of its eggs. Complications arise in the case of what is involved in understanding that there is just *one* of a certain kind of thing present, and yet further complications in understanding that *not* one of a certain kind of thing is present. Such complications, which will not be

[130] The distinction is most naturally stated within a common-sense realist sort of perspective. To state the distinction within the framework of Kant's transcendental idealism would be less straightforward because here there is no easy way of referring to the specifics of how things really are irrespective of how these things are actually experienced by a sentient being experiencing them. *Our* experience of the change in the number of eggs involves categories of quantity whereas the *bird's* does not. It is not easy to see how Kant could encompass this difference within his transcendental idealism: why should any more store be set by our quantity-categorised experience of the eggs than by the bird's quantity-uncategorised experience?

considered here, are to be expected, for one and nought stand apart from the other whole numbers in that to grasp them cognitively presupposes an antecedent grasp of the other whole numbers.

The connection between applying categories of quantity and grasping various kinds of spatio-temporal relations is perhaps most easily spoken about in the case of totality. Whatever the merits of the universal quantifier of modern logic, in formal logic it is not a good starting point for understanding this connection. For the interest here is, as I have said, in the conditions that need to be met if our logical notions of ‚all', ‚some' etc. are to be applied to what is empirically experienced, and the application of the concept of absolute unqualified universality to experience raises the well-known (supposed) difficulty of how absolutely universal statements are to be verified. It is straightforward to verify that all the crows on the path are black but it is impossible to verify that all crows wherever they may be are black because we cannot observe all the locations where it is possible for crows to be found. Absolutely universal statements are tremendously important to us in the modern world because we consider the laws of nature to be absolutely universal, but our attitude here is only a recent development in human history. What are the cognitive prerequisites of our applying the category of totality to what we experience when that application takes the form of *verifiable* assertions about things?

I will begin with some examples: every dog in the pound is a stray, all the trees around the mountain are conifers, everyone standing under the cliff is in danger, all who were there during the speech were bored, and all the children who went on the trip had a good time. In each of these examples we have a quantifier – ‚all' or ‚every' – whose scope is specified. In most of the examples this making explicit of the quantifier's range of application involves the use of prepositions – "in", "around," "under", and "during" – whose paradigmatic use is in describing spatial or temporal relations. Simply by speaking of what is *on* the table or *next to* it we define the scope of any quantifiers that we may use in speaking about the things that are on the table or next to it. The intimate connection between our use of quantifiers and what we may describe in general terms as our "taking account of" or our "grasping of" spatial and temporal relations is thus well-marked in ordinary language. Of

course, as with the children's trip example, we can limit the scope of our quantifying expressions in many other ways, e.g. "students taking first year philosophy", "cars driven by Michael Schumacher", and "current members of the Australian Labour Party". But equally obviously, an ability to ‚take into account' or ‚grasp' spatial or temporal relations, often very complicated relations, is a prerequisite of understanding such scope-of-quantifier-limiting expressions.

Just as it is impossible to verify absolutely universal statements so it is impossible to *falsify* statements where the existential quantifier or "some" is used without its scope being specified. Thus although it is known perfectly well that no pig can fly, for all that it cannot be established that the statement ‚some pigs can fly' is false simply through observing pigs, however many may be observed. What has just been said, then, about an ability to take into account or grasp spatial and temporal relations being a necessary precondition of being able to define the scope of the concept of ‚all' applies here too: the statement that some of the books on the table are contemporary novels is straightforwardly falsifiable through observation only because the scope of the statement is limited by the phrase "on the table."

Setting aside absolutely universal statements, the use of any quantifying expression requires that its scope be delimited, and this delimitation requires reference to, and hence an understanding of, certain spatial or temporal relations between the things that the quantifying expression is being applied to as well as to other things. What may well, following Kant, be called a *cognitive synthesis*, a synthesis generally of many and diverse elements, is required. The synthesis comprises a taking into account of things in space and time in two different ways: firstly, there is what, for the sake of brevity, may be called the subsuming of particulars under universals, and this requires a taking into account of relevantly similar elements drawn from past and present circumstances; secondly, there is a taking into account of how the above subsumed-under-universal particulars that have been drawn from present experience are spatio-temporally related to each other and to other things in certain relevant ways – that the cards are *on* the table, for example. An astonishing number and range of such ‚takings into account', albeit mostly unconscious, underpin our simplest quantifying judgments. This is what I

mean in speaking of cognitive synthesis here. I have tried to depict something of the general character of this synthesis, and in so doing I hope also to have shown some of the limitations of Kant's characterisation of synthesis in his proffered proof of the Axioms of Intuition.

In The Bounds of Sense, P.F. Strawson has spoken scathingly of Kant's account of cognitive synthesis as "an essay in the imaginary subject of transcendental psychology."[131] I think that Strawson's attitude here betrays a profound misunderstanding. He argues as follows:

> "The theory of synthesis, like any essay in transcendental psychology, is exposed to the *ad hominem* objection that we can claim no empirical knowledge of its truth; for this would be to claim empirical knowledge of the occurrence of that which is held to be the antecedent condition of empirical knowledge. Belief in the occurrence of the process of synthesis as an antecedent condition of experience and belief in the antecedent occurrence of disconnected impressions as materials for the process to work on are beliefs which support each other and are necessary to each other. But, by hypothesis, experience can support neither belief; … the entire theory is best regarded as one of the aberrations into which Kant's explanatory model inevitably led him."[132]

But Kant's ‚theory' of synthesis is not an empirical hypothesis, nor is it intended as such. It is put forward as an analysis of what cognitive experience of empirical things necessarily involves. It may be regarded as an *analytic* proposition. True, Kant may to some extent have mischaracterised the analysandum of which the ‚theory' of synthesis is the analysans: he may to some degree have mischaracterised the nature of empirical knowledge, and if so his resulting analysis would inherit this degree of unsatisfactoriness. I think that Kant can be criticised on this score, as I have tried to show. But any such criticism is one of detail only. I do, however, admit that from Kant's account of cognitive synthesis, or for that matter from the modified account proposed here, it is very easy to slide into tacitly assuming that cognitive synthesis, i.e. the taking into account of diverse things as illustrated above, is a kind of *process* – mental, physical, or both. Even more objectionable would be the assumption that it is a process that could in principle be described completely, precisely and unambiguously. For these assumptions really mark very high level empirical hypotheses about *how* the various kinds of takings into account

[131] P.F Strawson, op. cit. p. 32.
[132] Ibid.

described above and in the two previous chapters might be accomplished, and this would be tantamount to suppressing the fundamental question of whether the cognitive syntheses we have been speaking of *could* be implemented by any process.[133]

I have argued that the application of categories of quantity in cognitive experience presupposes two kinds of cognitive synthesis across space and time, namely the subsumption of particulars under universals[134] and the grasping of, i.e. the taking into account of, relevant spatial or temporal relations, these two syntheses in turn being subjected to a yet higher-order synthesis which embraces both. Now even the parent bird in the earlier example was able to subsume its experience of its particular eggs under a universal – which I called eggishness – and it goes without saying that the bird has *some* grasp of *some* spatial and temporal relations, even relations potentially relevant to its being able to know the number of its eggs, such as the fact that its nest is larger that the eggs it contains. Evidently, unlike the synthesis of reproductive imagination that Kant speaks of, the cognitive synthesis spoken of here may vary from being comparatively rudimentary to being much more highly developed in character. Compared with the bird, our grasp of the different ways in which the things which we have experience of can be brought under universals is enormously much more wide-ranging, and the same is true of our grasp of how things may be spatially or temporally related to one another. Normally we take this for granted in our daily lives, thinking nothing of it, but in some neurological patients it can break down and a consideration of such cases can bring to our notice the great number and range of spatial relationships that we routinely take into account (= synthesise) during our daily lives. The Neurologist A.R. Luria found that patients with

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[133] The importance of the idea of cognitive synthesis, both for an understanding of Kant and for cognitive science has been recognised and discussed by Andrew Brook, Patricia Kitcher, Onora O'Neill, Robert Hanna and others. So far as I can judge these writers do not make the above distinction: Hanna, for example, speaks of "the various information-processing operations that generate cognitions are all specifications of a single generic processing operation: synthesis." See A. Brook, Kant and the Mind (1994); P. Kitcher, Kant's Transcendental Psychology (1990), O. O'Neill, "Transcendental Synthesis and Developmental Psychology", in Kant-Studien 75 (1984) pp. 149-67, and Hanna, op. cit.

[134] I use this terminology for convenience only, without commitment as to the ontological status of universals. Even nominalists, who deny the existence of universals can *speak* of universals as a kind of short-hand, and this is all I am doing. See D. Armstrong, Nominalism and Realism: Universals and Scientific Realism Volume 1 (1978)

large pre-frontal lobe injuries could not understand, and often misunderstood, the meaning conveyed in a thematic picture used as a diagnostic test: a man in the picture has fallen through the thin ice of a pond and is in danger of drowning, several people are coming to his aid from different directions and with different objects in mind, eg. one man is lying down trying to reach across the ice to the man who is in danger, etc.[135] People who do not have neurological impairment can take account of all this effortlessly. It may be said that their understanding of the picture involves a multitude of *present-present* syntheses in addition to the *present-past* syntheses spoken of both above in connection with the ‚subsuming of particulars under universals' and in chapter two when discussing the example of the father who has noticed a change in the appearance of his sick daughter. That their understanding also involves the potential to accomplish *present-future* syntheses is shown by their being able to respond appropriately to any of an indefinitely large number of possible questions that might be asked about the picture or comments made about it.[136]

The importance, which has been here emphasised, of considering our overt actions in relation to space for understanding cognitive synthesis has also been emphasised recently by a number of writers, most notably perhaps by Jeff Malpas.[137]

> "Only through being able to relate to space ourselves, that is, to our own differentiated bodies, can we grasp space in such a way as to allow for the unifying of representations in relation to objects – that is, for the possibility of synthesis – but in grasping space in this way one thereby also grasps certain possibilities for action. The ordering of objects in space, then, is also an ordering of objects in relation to action."[138]

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[135] A.R. Luria, The Working Brain: An Introduction to Neropsychology trans. Haigh, B. (1973) pp. 214-16.

[136] The myriad things taken into account in such a synthesis are necessarily taken into account *holistically*, for the significance of any item is liable to change if its relationship to other items is changed. We have here another example of the holistic character of the psychological realm that has been a major theme developed by Jeff Malpas. See J. Malpas, Donald Davidson and the Mirror of Meaning (1992).

[137] See J. Malpas, "Constituting the Mind: Kant, Davidson and the Unity of Consciousness", in International Journal of Philosophical Studies Vol. 7 (1), 1-30. Also, A. Melnick, Space, Time and Thought in Kant (1989) and S. Hurley, "Kant on Spontaneity and the Myth of the Given", Proceedings of the Aristotelian Society, 94 (1994) pp. 137-64.

[138] Ibid. p. 20.

In the foregoing analysis it has been assumed that what Malpas says here is correct. Malpas then goes on to say:

> "This suggests a conception of synthesis – the combining of states – as indeed nothing but activity, but activity understood as the activity of embodied, oriented, located agency. The unity of the self, and the unity that makes for the possibility of content, is thus given in the unity of spatialised, embodied agency."[139]

Under my construction, on the other hand, the cognitive synthesis which we have been explicating is not itself an activity – any more than it is a process. It is rather the sum of all the ‚takings into account' (or the ‚graspings') of multifarious things in space and time that are a *prerequisite* for "the activity of embodied, oriented, located agency."

Moreover, rather than say "the unity of the self, and the unity that makes for the possibility of content, is thus given in the unity of spatialised, embodied agency" I would say of this unity that it is *constitutive* of, i.e. *part and parcel* of, the unity of spatialised, embodied agency. This is more than merely a stylistic difference. To see why let us look at the following passage from Malpas which occurs a few lines down from that previously quoted.

> "That which does the unifying that makes for the possibility of selves or of contentful states is, as a consequence, nothing over and above activity itself. So the problem concerning the need for a subject that *produces* synthesis, and to which contentual states can be attributed, largely disappears – no such unifying subject is required. Activity does not depend on some prior unity, whether of the subject or anything else, but is itself the establishing of unity…"[140]

This passage provides the opportunity of conveying something of what the foregoing analysis of the categories of quantity and behaviour imply (or rather *do not* imply) for our conception of the self, a conception from which hitherto I have prescinded but which is of great importance in Kant's philosophy. The above passage expresses the thought that through a proper understanding of an agent's activity we could come to understand how the unity of the self arises, a self to which "contentual states can be attributed." For Malpas states that "Activity does not depend on some prior unity". This is contestable. Activity – as distinct from the production of bodily movements without qualification –

[139] Ibid. pp. 20-21.
[140] Ibid. p. 21.

may very well depend on a prior unity, to wit, whatever it is that underpins the fact that an agent's activity fits in more or less coherently and appropriately with the agent's other activities. Throughout one's life one's activities may become *more* coherently and appropriately interrelated and one's self in the sense of one's personality and character may thus become *more* unified, but at no stage in this would coherence and appropriateness arise from that which lacks all coherence and appropriateness. Therefore, selfhood, understood as a sort of unity, could not be wholly explained in terms of activity. What light, then, does my analysis of the categories of quantity and behaviour throw on the question of the self? None at all – the self remains for me simply something to be wondered at.

Chapter Five

Interim Conclusions about Cognitive Synthesis and Causality

This chapter is in three parts. In part one it is argued that there is really only one category of the understanding – namely, that of causality[141] – it being understood that here the word "category" refers to a *proclivity*, a proclivity to effect cognitive syntheses of a certain distinctive character. Strictly speaking this claim is stronger than is needed for the development of the main theme of this thesis. For all that the latter requires is that syntheses of the above character be *constitutive* of what it is to understand something – anything – without ruling out the possibility that there are other proclivities that are also constitutive of understanding as such. Part two presents a comparison between Kant's conception of cognitive synthesis and the closely related conception of it proposed here. Part three examines and rejects the idea that to speak of causality is to speak of nothing other than a kind of rule-governed succession. The three parts make up a sustained argument.

1) Causality as the One Category of the Understanding

Kant's argument of the Second Analogy is *about* a prerequisite for our perceiving an event. But its *purpose* is to establish the *a priori* principle that every event is causally necessitated. The connection here, Kant maintains, is that it is constitutive of our taking what is given to us through sensibility to *be* an event that what is given to us is subject to the schematised category of rule-governed succession. If his argument is sound then it would, as has been argued, provide an answer to two of Hume's questions about causality: where does the idea of causal necessitation originate? And why do we hold that every event is causally necessitated?[142] The argument is thus the nub of Kant's Copernican Revolution in philosophy.

In chapter one it was argued that the Second Analogy argument fails because in many situations we can just *tell* that an event is occurring or has

[141] Schopenhauer maintained that Kant's twelve categories should be reduced to just one, causality. See Schopenhauer, A., The World as Will and Idea trans. Haldane, R.B & Kemp, J. (first published 1883), Vol. 1 p. 13.
[142] Hume's Treatise, op. cit. pp. 53 and 55.

occurred: we are often so to speak ‚impelled' to take what is given to us through sensibility as an event. Although there are no sensory items or configurations that correspond to ‚our being affected by something' we can often, as a sheer matter of fact, tell when we are so affected. This, essentially, is A.O Lovejoy's (1906) objection to Kant's argument.[143] It was noted that given C.S. Peirce's category of Secondness the objection follows as a matter of course: being impelled to take what is given to us through sensibility as an objective change is a paradigm example of Peirce's Secondness.[144]

From the foregoing it was not concluded that Kant's Copernican response to Hume is misconceived. On the contrary, it was argued in part five of chapter one that a Copernican response is called for to Hume's *third* question about causality – namely, what justifies us in believing that such and such causes necessarily have such and such effects?[145] This question mainly comes down to the question of what justifies *induction*, and it was argued that to speak of justification here really makes no sense because – and here is the Copernican response – *without* taking the past to be a guide to the present and the future there could be no cognitive experience at all.

From the foregoing, what follows in regard to the idea of a *category* of causality? The idea of imposing an *a priori concept* on what is given to us through sensibility is not so much mistaken as likely to be very misleading. For what is being maintained is that constitutive of a being's having cognitive experience is the being's proclivity to be *concerned* about causal connections, whether in the business of *looking* for them or of taking them into *account* in the course of daily life. But so long as this is understood there is no reason why, in recognition of Kant's philosophical endeavours in regard to this matter, we should not continue to speak of a category of causality. It needs to be borne in mind though, that to ‚look for' causal connections or to take into account causal connections already known is necessarily to effect certain cognitive syntheses whereby such and such earlier offerings through sensibility are taken into account together with *these* present offerings rather than with *those* offerings. The syntheses in question necessarily take the form of the growth of

[143] Lovejoy, in Gram, op. cit. pp. 284-308.
[144] Peirce, in Ketner, op. cit. p. 148.
[145] Hume's Treatise, op. cit. p. 55.

certain patterns of connections between what has been available from successive offerings through sensibility. This is a natural development of Kant's conception of cognitive synthesis, and it makes it clear that to speak of concepts here is merely a short-hand for speaking of the existence of certain recurring kinds of syntheses or of the power to effect certain syntheses.[146]

Kant holds that the category of causality is just one of twelve categories, and that the corresponding principle of the understanding is just one of five such principles. I have argued (in chapters two, three and four) that what Kant takes to be other categories and principles are not really so. Instead, each is related to the category of causality or to its corresponding principle merely as part to whole. The relevant arguments will be recalled in turn.

In chapter two it was argued that there is no need to posit a sempiternal substance to serve as a backdrop against which changes can be defined because the backdrop required for the constitution of any given change may be anything from the ego-centrically located space where the change occurs to the distinctive appearance of a familiar person, object or place. There is not just one backdrop but limitlessly many. Kant's argument provides no warrant for an *a priori* category of substance coordinate to that of causality. Instead, the above criticism of his argument draws attention to the fact that to look for causal connections or to take them into account in achieving various ends requires the ability to identify changes – at least some – when they occur, distinguishing them from the persistence of the *status quo*. The above criticism of Kant's argument of the First Analogy may thus be regarded as throwing light on *part* of what the category of causality encompasses.

In chapter three it was argued that Kant's actual argument for the Anticipations of Perception fails – although we know as a matter of fact that we *can* anticipate perception in the way Kant describes – but that an analogous argument in regard to shapes, an argument moreover that Kant himself hints at [B204], succeeds. The above consideration shows that we have a tremendously wide-ranging ability to rank items that we are presented with through sensibility in accordance with how much or how little they resemble

[146] The above is simply a sketch of a conceptual analysis of what the proclivity to be concerned about causal connections amounts to. My adherence to Kant's first person point of view and my retention of the phrase "offerings available through sensibility" etc. is optional.

each other in different respects. The same consideration also shows that without *some* ability, however modest, to do this there would be no cognitive experience. And again, if we are to be able to look for causal connections or take them into account in achieving our ends then we need to be able to take account of the degrees to which things resemble or differ from each other in different respects: the latter constitutes an integral part of the former.

Also discussed in chapter three were Kant's three (so-called) categories of Quality, viz. Reality, Negation and Limitation. To apply the category of Reality is to affirm that such and such exists or is the case; to apply the category of Negation is either to deny that such and such exists or is the case or else to affirm that it does not exist or that it is not the case; and to apply the category of Limitation is to affirm that such and such is not a so and so, eg. to say that what is in the corner of the room is not the planet Mars. This seems straightforward enough. The trouble is that what is spoken of here is what J.L Austin calls *speech-acts*, specifically, the speech-acts of affirming and denying,[147] and speech-acts are not concepts. We apply concepts, it may be said, *in* performing the speech-act of affirming or denying something but the speech-act itself is not the mere applying of a concept or concepts. It therefore follows that it is a mistake to classify Kant's Reality, Negation and Limitation as categories.[148]

It is also not difficult to see that a further four of Kant's so-called categories – namely, Community and the three categories of Modality – should be removed from the table. The findings of modern physics debar Community from categorical status because it is known that not everything *does* affect everything else. For example, because light from its source takes *time* to reach whatever it affects, and because the universe is so big, there is plenty of time for events to occur here on earth before they can be affected by earlier events in the sun – about eight minutes in this case. As for the supposed modal categories another example will suffice to show that they also cannot be true categories. Very young children and many animals, e.g. their kittens,

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[147] Austin, J.L, How to Do Things with Words (1965)

[148] To do so would be to make what Gilbert Ryle calls a „category mistake', as if (to cite an example given by Ryle) after learning about the respective tasks of the bowlers, batsmen, fieldsmen etc. a newcomer to cricket were to ask whose task it is to impart the team spirit. See G. Ryle, The Concept of Mind (1949), p. 18.

undoubtedly have cognitive experience, for they impute causality to things whenever they take their properties into account, and if our metaphysics of experience is to avoid indefensible anthropocentrism it certainly has to do justice to *their* cognitive experiences as well as to our own. To claim that Kant's modal categories are involved in the kind of understanding available to very young children or their kittens would be a very difficult one to make.

Apart from causality there now remain only Kant's three so-called categories of Quantity and their corresponding Principles of the Understanding. What was said in the example from chapter four (about the bird that cannot count) is, it is hoped, sufficient to show that cognitive experience is perfectly possible for beings that have no conception of ‚all', ‚some', ‚one' or ‚number'. On the other hand, the cognitive grasp of spatial and temporal relations that is a prerequisite for having a conception of ‚all', ‚some', ‚one' and ‚number' would appear to be different only in its range or extent from that which is a prerequisite for re-identifying the same causal regularity in different (spatial, temporal, or spatio-temporal) contexts. Arguably then, the possession of *some* ability to grasp the spatial or temporal relations that obtain amongst what is given to us through sensibility is a necessary part of the proclivity to look for causal connections and to take them into account for various purposes.

2) Cognitive Synthesis as Understood by Kant and as Proposed Here

Some idea of what Kant means by "synthesis" should be evident from his argument for the Axioms of Intuition that was examined in the last chapter. But Kant's most systematic coverage of what he means by synthesis is at A99-A104 and the following discussion starts from these passages. Kant holds that a prerequisite for having cognitive experience is that successive offerings (representations) through sensibility be connected up through being apprehended by a single subject [A99]. He calls this the *synthesis of apprehension*. Without such a synthesis there could be no understanding of past or future, and any suggestion that there could yet be an understanding of the *present* raises the question of what this could possibly mean. At the most, an awareness *just* of what is present would be a feeling of some sort, and we are speaking here not of feelings but of *cognitive* experience. The synthesis of

apprehension plays an important part in Kant's Transcendental Deduction. Here, by contrast, it is simply taken for granted.

Kant next introduces the *synthesis of reproduction* [A100]. If, as Kant points out, we have had past experience of the mineral cinnabar, for example, we associate together its various qualities (representations), such as its redness and weight. We could never gain knowledge of cinnabar as a substance unless whilst experiencing its redness we *also* brought to mind its weight at the same time. This bringing of its weight to mind is the work of what Kant calls the imagination, and he speaks here of the *synthesis* of the imagination.

> "Experience as such necessarily presupposes the reproducibility of appearances. When I seek to draw a line in thought, or to think of the time from one noon to another, or even to represent to myself some particular number, obviously the various manifold representations that are involved must be apprehended by me in thought one after the other. But if I were always to drop out of thought the preceding representations (the first parts of the line, the antecedent parts of the time period, or the units in the order represented), and did not reproduce them while advancing to those that follow, a complete representation would never be obtained: none of the above-mentioned thoughts… could arise." [A102]

There is something incontestable that Kant is saying here – namely, that to understand anything at all it is necessary to take into account not only what is at this very moment given to us through sensibility but also what has *previously* been given to us. Much else that Kant says, though, is contestable. If, to take an example from A.W Wood,[149] I hear someone utter the line "April is the cruellest month" from T.S Eliot's *The Wasteland*, then, by the time I hear the word "month" spoken I can certainly no longer hear the words that were spoken before it, nor have I any images – whether auditory or visual – of these words. I might even be unable to recall the words with perfect accuracy. In no sense am I aware of reproducing the earlier words whilst hearing the last word, and to assume (as Kant seems to) that nonetheless these earlier words *must* be reproduced somehow at the same time as I am hearing the last word would be unwarranted. Any such assumption should be regarded as a very general empirical hypothesis.

It is understandable then that Kant's conception of synthesis has been regarded, by Strawson for example, as armchair psychology.[150] Evidently,

[149] A.W. Wood, Kant (2005) p. 48.
[150] Strawson, op. cit. p. 32.

what is incontestable about what Kant says of the synthesis of reproduction – the name itself is misleading – needs to be separated entirely from what is contestable. What is incontestable is that in understanding something, e.g. what has been said to us, we necessarily take into account *both* what is now present *and* what is no longer present but which is *relevant* to what is now present. The last clause here is crucial for an understanding of synthesis as it is being developed in this thesis. The same is true for understanding Kant's conception of cognitive synthesis, although he addresses the matter by introducing what might appear to be a third kind of synthesis, namely, a *synthesis of recognition* [A103-4]. Wood gives a succinct explanation of this. He says, in regard to his example of the line of poetry,

> "It is not enough that I be able to *reproduce* the content „April', „is', and so forth. I must also be able to *recognise* the reproduced contents as the same content-types that occurred earlier in the series."[151]

Clearly, to recognise that earlier and later contents go together is to recognise their *relevance* to each other.

Kant's syntheses of apprehension, reproduction and recognition are merely different aspects of the one cognitive synthesis. In developing the closely related conception of cognitive synthesis in this thesis I have preferred not to speak separately of these three syntheses but instead to characterise cognitive synthesis simply in terms of what necessarily has to be taken into account in understanding something. But thus far, except for the above strictures regarding how the synthesis of reproduction should be understood, there seems to be no essential difference between Kant's conception of cognitive synthesis and that being developed in this thesis. Where then is the difference between the two conceptions of cognitive synthesis?

To answer this question it is first necessary to ask another – namely, how is it that the cognitive syntheses that we effect are, in the great majority of cases at least, not haphazard or arbitrary? A partial answer is: in virtue of the synthesis of recognition. Wood's example of the line of poetry is an illustration of this. But, recalling the example from chapter two of the father's noticing the change in his child's state of health, it is evident that by itself the

[151] Wood, op. cit. p. 49.

synthesis of recognition does not suffice to prevent the vast majority of cognitive syntheses from being haphazard or arbitrary: for example, were he to have ignored his daughter and instead listened to the song being played on the radio his synthesis of recognition might be faultless yet the synthesis effected would be inept and absurdly out of place. But Patricia Kitcher maintains that the reason why, for Kant, cognitive syntheses are not haphazard or arbitrary is a consequence "of the rules by which they are implicitly carried out."[152] Also, speaking of the synthesis of the imagination, J. Michael Young proposes that the connections made between our present and our past experiences are made in accordance with rules.[153] Kant's reliance on and invoking of rules throughout his Critique is much in keeping with this idea that to ensure that cognitive syntheses are not arbitrary or haphazard but make sense they must be effected in accordance with rules. I take it then that for Kant cognitive syntheses are rule-governed, indeed, rule-governed "in a definite way that can be specified in principle."[154] This would be Kant's explanation of how it is that our cognitive syntheses are generally not haphazard or arbitrary but are more or less reasonable or sensible.

It is precisely at this point that the conception of cognitive synthesis being developed here departs from Kant's. Again let us recall the example of the father and his sick child. The father notices a change in his child's appearance *without* noticing any of a myriad other changes that have happened during the time in question that he *could* have noticed had they been relevant to her predicament, e.g. changes in the way the clouds are obscuring the sun, or the teddy bears are arranged in the child's bed, etc. Out of indefinitely many possible cognitive syntheses it is as if the father selects the very one that is most relevant to what he is up against with his child being sick. To further illustrate the point, consider another example: you see that a paddock's gate has been left open and that consequently there is nothing between you and the bull that has just lifted up his head and taken notice of you. Certain relevant

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[152] P. Kitcher, "Kant's Philosophy of the Cognitive Mind" in Guyer, P. (2006) op. cit. p. 188. Kitcher notes, "that the bald claim that any cognitive faculty must operate by principles appears to be just the sort of unsupported metaphysical claim that Kant wrote the *Critique* to protest (sic)."

[153] J.M. Young, "Kant on Imagination" in Funke, G. & Seebohm, T.M. eds. Proceedings of the Sixth International Kant Congress (1989) p 416.

[154] Kitcher, op. cit.

spatial relationships enter into your cognitive synthesis about your predicament. But there are limitlessly many *other* – utterly irrelevant – spatial relationships that *might* have been included in your cognitive synthesis – that the angle subtended by such and such adjacent palings of the fence is slightly less than that subtended by the pair of palings further on, for example. Of course, your cognitive synthesis is uncluttered by any taking into account of such irrelevant spatial relationships. These and innumerable other examples[155] suggest the following conclusion: the only plausible rules covering any such case, rules in accordance with which the cognitive synthesis concerned is to be effected, would presuppose the very understanding that the cognitive synthesis is constitutive of. Examples of such question-begging rules are, „When a child is in your care, be alert to any changes in her whether for the better or worse', and „When a dangerous animal has a free path between itself and you try to get somewhere safe immediately'.

In other words, syntheses would not *count* as syntheses of the *understanding* unless they are appropriate in various ways rather than arbitrary or haphazard. And to suppose that the requisite kinds of appropriateness could be achieved in virtue of the syntheses being effected in accordance with rules would be question-begging because the only candidates for such rules would presuppose the same understanding as that which is constitutive of the syntheses concerned. For the same reason the *proclivity* to effect cognitive syntheses should not be thought of as a rule-governed proclivity.

While the above argument is good as far as it goes, there is a loophole available for a determined adherent of the view that good sense and reasonableness is reducible in the end to behaving in accordance with the right rules. For it might be argued that the rules in accordance with which cognitive syntheses are effected might be like the myriad sub-routines of a complicated computer program, where each sub-routine carries out only an elementary operation and where the requisite appropriateness of the computer's output is achieved only through the orchestrated carrying out of all the sub-routines. To reply. The above is a hypothesis, one that some well-informed people find

[155] Such as that the clouds are hanging very low, much lower than yesterday; and there is a blade of grass three feet to your left, etc. That is to say, there are innumerable spatial relationships in your visual field some of which you might have taken notice of had there not been a bull, others of which you would probably never taken any appreciable notice of.

plausible and others not. The hypothesis implies that appearances regarding this issue are deceptive. It implies that the unspecifiable or ‚open-ended' character of the syntheses that are constitutive of understanding is only apparent and that really everything that such syntheses comprise could in principle be spelt out and specified, i.e. described completely in terms that are precise and unambiguous in all relevant respects. That, on the contrary, the unspecifiable character of the syntheses constitutive of understanding is real – genuine – is argued in chapter eight.

What has already been said supports the following weaker claims: 1) that the syntheses constitutive of the understanding are *as if* they had been selected from indefinitely many other possible syntheses, the vast majority of which would have been arbitrary, haphazard, pointless or nonsensical; 2) that because of this (virtual) selectiveness such syntheses *appear* not to be describable except in very general terms or, if in more specific terms, only very incompletely or in very limited respects; and 3) that given that appearances here might *not* be deceptive, we should seriously consider it to be a possibility that the *causality* that is constitutive of the syntheses of the understanding is something *other* than rule-governed succession.

There is a difficulty in the way of accepting the third of these (comparatively) weak claims. For it might seem that the very idea of a causality that is something other than rule-governed succession can be ruled out *a priori* on the ground that it is an analytically necessary truth that every causal connection is a case of rule-governed succession, i.e. that this is part of what we *mean* by "causal connection". This difficulty is addressed below in part three of the chapter.

3) Should we take it to be Analytically True that all Causality is a Kind of Rule-Governed Succession?

Before tackling this question there is a subsidiary question, which is yet of some importance, that is probably best got out of the way first – namely, does my defence (given in part five of chapter one) of Kant's Copernican response to Hume entail that *every* event must have a cause? The answer is: no. For my defence, in a nutshell, is that cognitive experience, i.e. experience informed by any sort of understanding, would be impossible unless we took it

that there were (some) causal connections between events, and this of course does not imply that cognitive experience would be impossible if there were some events that do not, or that do not in every respect and detail, enter into causal connections. So long as there are plenty of causal connections around, or, in the transcendental idealist idiom, so long as we have plenty of occasions for attributing the connection of cause and effect to successive events, cognitive experience could still flourish. Indeed, quantum theory has taught us that this is how things are.

The main question is not, *Is* it analytically true that all causality is a kind of rule-governed succession? But rather, *Should we take this to be* analytically true? The question is a normative one. It is concerned with how we *should* conceive of causality. It does not, taking as given how we *do* conceive of causality – or at least how many people do – ask what this conception involves. We are, of course, perfectly free to define "cause" and its cognates as to *make* it analytically true that causes necessitate their effects. But the question this thesis is concerned with presupposes that the issue of the analyticity or otherwise of the statement that all causality is a kind of rule-governed succession is not to be settled simply by fiat. A definition may be adequate or inadequate and the question concerns what is the most adequate view that we can have of causality taking all that we think is relevant into account. My use of the word "view" here is considered. For to assume in advance that we could come up with a definition that is both clear cut and which satisfactorily covers all that pertains to our notion of causality would be to prejudge the issue.

In what follows it will be argued that our conception of causality ought not to be such as to make it analytically true that all causality is a kind of rule-governed succession: we can make this analytically true by so defining "cause" and its cognates as to ensure it but such a fiat would be unreasonable. The argument below is not that there *are* some causal connections that are not cases of rule-governed succession. It is a much stronger and *substantive* claim and further arguments and considerations in its support will be presented in the final chapter – chapter eight.

There have been philosophers – Bertrand Russell[156] and A.J Ayer,[157] for example – who have denied that it even makes sense to speak of causality except as a sort of short-hand for rule-governed succession. These thinkers have tended, whilst engaged in their philosophical endeavours, to have had their thoughts fixed on the natural world of non-living things, and the downside of this is that they have failed to take into account in their reasoning a whole realm of causality – namely, the causal connections involved in, and which largely constitute, our social intercourse with one another.[158] Whenever we discuss things with one another or engage in conversation, we respond to what other people have said by saying things ourselves that are causally dependent on the latter because what we are saying makes sense in relation to it. At a party where many people in the same room are all speaking at the same time, although there may be background noise and some confusion, it is usually possible nonetheless to sort out whose remarks are causally dependent on whose earlier remarks. But in our attributions of causality here we make no use of Kant's causal schema of ‚rule-governed succession'. Rather, we identify the causal connections through seeing whose remarks make sense in the light of whose earlier remarks. Occasionally we may make mistakes or may be unsure whether what someone has said is causally connected with this earlier comment of A's or with that earlier comment of B's. But in recognising such failings we implicitly acknowledge the above general truth.

There may be some resistance to accepting what has just been said. For so strongly entrenched is the idea that, necessarily, given what the word "cause" and its cognates mean, ‚all causal connections are cases of rule-governed succession', that to say that A's remark is the cause of B's comment might seem to be absurd because it is thought to imply or suggest that A's remark *necessitates* B's reply. For if B's reply following A's remark is a case of rule-governed succession then B's reply might seem to be *necessitated* by A's remark. But the very point at issue here is whether our conception of causality *should* be such as to entail ‚all causal connections are cases of rule-

[156] B. Russell, "On the Notion of Cause", in Mysticism and Logic (1953) pp. 171-196.
[157] A.J. Ayer, Language, Truth and Logic (1936) p. 55.
[158] The significance of this realm of causality for our general conception of the world, especially insofar as this is informed by the natural sciences, is examined at length by Richard Green. See his The Thwarting of Laplace's Demon (1995.)

governed succession' as an analytic truth, so to balk at attributing causality to our verbal exchanges with one another would be to refuse to acknowledge that our conception of causality might be inadequate and that if so it is something that we might need to reconsider.

Any residual misgivings about speaking of our verbal exchanges with one another, our "pragmatic ties"[159], as *causal* connections may perhaps be dispelled by the following example. Suppose that archaeologists have discovered the remains of two Sumerian cities, at both of which they have found clay tablets with cuneiform writing on them. The tablets at both cities are of two sorts – some are fragile and crumbly, some are much stronger and smoother. At some point the tablet makers must have started to use a better clay-baking technique. How did this come about? Was the new technique invented independently in each city? Or was the better technique first invented at one of the cities and then somehow transmitted to the other? The tablets can be read by scholars, who find that among the tablets are letters sent by high officials from each city to their counterparts in the other city. Not only this but they find a letter at city A from an official at city B who speaks of the danger to both cities from a third city, C, and to help to secure an alliance between the two cities he describes a new tablet-baking technique that someone at city B had devised. The archaeologists search among the tablets at city B and find a clay tablet of the non-fragile sort from an official at city A giving thanks for the information regarding the new tablet-baking technique and agreeing to form an alliance. The archaeologists conclude that the better tablet-baking technique was invented at city B and thence transmitted to city A as a result of being described in a letter. A causal explanation has been established.

There should be no doubt, then, that some causal connections can be identified without the identification requiring any rule to be found that govern the connection.[160] In particular, the causal status of pragmatic ties (our verbal

[159] Ibid.
[160] This point has been emphasised by Donald Davidson. See D. Davidson, "Actions, Reasons and Causes" in Essays on Action and Events (1980) pp. 3-19. Also, „Mental Events' pp. 207-225.

interactions with each other) is discernable without the mediation of Kant's schema of rule-governed succession.[161]

To conclude, our conception of causality ought not to be such as to make it analytically true that every causal connection is a case of rule-governed succession. The third claim made at the end of part two of this chapter therefore stands: we should seriously consider it to be a possibility that the causality constitutive of the syntheses of the understanding is something *other* than rule-governed succession.

The considerations covered in this chapter help to set the stage for the examination of Kant's Third Antinomy in chapter seven and for the examination of a contemporary analogue of it in chapter eight.

[161] It should be noted that we have been speaking here from an epistemological point of view, our concern being solely with the conditions relevant to our *attributions* of causality. We have here prescinded from the ontological question of whether our pragmatic ties *are* in fact something other than instantiations of rule-governed succession. This question is addressed in chapter eight.

Chapter Six

Kant's Conception of Cognitive Experience as Judgment

There are two very different contexts in Kant's Critique of Pure Reason where the notion of 'spontaneity' plays an essential role. The first is in the introduction to his Transcendental Logic where he speaks of "the mind's power of producing representations from itself" [B 75]. Allison calls this "the ordinary epistemic activity of the understanding".[162] The second is where he speaks of the causality of freedom (at B474) when presenting the Third Antinomy. At one time Kant held that we are justified in inferring the spontaneity of the causality of freedom from the spontaneity of the ordinary epistemic workings of the understanding, but by the mid-1770's he had abandoned this view, "affirming instead a sharp distinction between "logical freedom", which pertains to acts of thought, and "transcendental freedom", which supposedly pertains to acts of will."[163] I suggest that it is Kant's earlier view which is correct. Indeed, we have in Kant's earlier view another of Kant's insights, although, as with his Copernican insight, it needs to be stated differently, and to state it correctly a veritable overhaul of our thinking about the causality involved in cognitive experience, a radical change in our very conception of causality, is called for. The present chapter continues the task, begun in earlier chapters, of effecting this overhaul, of explaining how our conception of causality can and needs to be changed.

This chapter sets out a constructive criticism of Kant's general conception of (human) cognitive experience as discursive[164], i.e. that to have cognitive experience, i.e. to have experience in the proper or full sense of the word as having epistemic status, is to judge, whether rightly or wrongly, that

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162 Allison,(1996) op. cit. p. 92. H. Allison, "The Concept of Freedom in Kant's „Semi-critical' Ethics", in Archive für Geschichte der Philosophie 68 (1986) Heft 1, 109-111; and K. Ameriks, Kant's Theory of Mind (1982) pp. 194-196.

163 Kant's earlier view is stated in Reflexionen 4218, 4284, 4336, 4723, 4904, 5109, 5441, 7041, 7440 and Metaphysik 28: 267-69. See Allison (1996) note 1, p.199. Kant's later view is stated in Reflexionen 5442 and examined by Dieter Henrich in D. Henrich, "Die Deduktion des Sittengesetzes" in A Schioan ed. Denkenin Schatt des Nihilismus, (1975) pp. 55-102.

164 Kant also considers the idea of a non-discursive or purely intuitive cognitive experience, such as some might attribute to God. He regards the contrast between such a non-discursive cognitive experience and our – discursive – cognitive experience as instructive. See Critique of Judgment, trans. J.H. Bernard (2005)

something – something objective – is the case, and that to judge – in this very general sense – is to subsume what he calls "representations", whether given to us through sensibility or produced from our own minds, under concepts.[165]

1) Is the Making of a Judgment a Necessary Condition for Cognitive Experience?

At B94 Kant states that "we can reduce all acts of the understanding to judgments, and the *understanding* may therefore be represented as a *faculty of judgment*." Taken literally this implies that merely to understand what someone has just said I must carry out an action, namely, that of judging that something or other is or is not the case. It is not at all evident that I need do anything of the sort. I take it, then, that Kant is using the word "judgment" in a different and wider sense than is commonly used. Kant would presumably say that when I (merely) understand what someone has just said I *ipso facto* perform an *inner* action, the action, that is, of making a certain judgment, a judgment pertaining to the import of the person's statement. Why does Kant hold that to understand something is *ipso facto* to *do* something, albeit that the doing is not overt – although it may be manifested in various overt ways? He holds this view, I suggest, because he sees it as the only alternative to Hume's view, which he rejects, that the impressions that we receive through sensibility constitute knowledge in themselves, and our most certain knowledge at that. In what follows it is argued that there is a good measure of truth in Kant's conception of cognitive experience as judgment but that the truth is misstated if we take the word "judgment" here as the name for an action, even an 'inner' action.

In his book How to Do Things with Words[166] J.L. Austin brings to our notice the fact that by or in uttering certain words in certain contexts we perform certain actions: speech acts. For example, in many different situations but not in all, by saying "I promise to be there on time", I *promise* something: from the moment the words are out of my mouth I am firmly committed, in virtue of my uttering the words, to achieving a certain end. To promise, then,

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165 The relevant passages are located as follows: B74-76, B93-94, B142 and B171-174. See also Henry Allison (1983) op. cit. pp.65-73.

166 J.L. Austin, op. cit. Especially lecture X11, pp. 147-163.

is certainly to do something. Promises are actions. Likewise, if I had uttered "I'll try to get there on time", although I would not have made any promise I would still have committed myself to something, namely, to trying to get somewhere on time. Merely by uttering these words – in an appropriate context – I perform an action. Austin dubs the above actions "*commissives*". He identifies and names several other kinds of actions that we perform merely by uttering certain words in a suitable context. *Exercitives* include such actions as the naming of a ship, the appointing of a deputy, the sentencing – by a judge or magistrate – of someone who has broken the law, or the introduction of new legislation. *Behabitives* are a miscellaneous grouping that include such actions as my expressing, through uttering certain words, my dislike of the word "representation" in Kant's philosophy or my preference for living in Hobart rather than in Melbourne. *Verdictives* include such actions as a jury's giving its verdict on a case or someone's saying that the coffee is too hot, that the front door is locked, or that she guesses that the answer to the question is so and so. Besides these there are of course questions and imperatives: asking questions and giving orders are speech-acts too. Nor should we overlook the making or entertaining of suppositions or ideas for the sake of argument or merely to explore their implications. These also are speech-acts.

Judgments in the usual sense of the word fall *within* the class of verdictives. But, clearly, in Kant's very wide sense of the word they *encompass* verdictives. This still leaves Kant in difficulties though. It is not enough simply to say that Kant is using the word "judgment" in a sense much wider than is usual. For it is incontestable that questions, imperatives, suppositions, entertainings (of ideas), commissives and exercitives are in no sense, however wide, judgments that something is the case. To promise something is in no sense to make a judgment nor is ordering someone to do something, or asking a question or merely entertaining an idea. Yet it is also incontestable that to ask questions, issue orders, entertain ideas, or perform commissives or exercitives involve our having cognitive experience. For unless the words whose utterance constitutes these acts are uttered with understanding we would not account their utterance *as* speech acts. Kant faces the difficulty that with questions, imperatives, entertainings, commissives and

exercitives we have what appear to be counter-examples to his conception of cognitive experience as judgment.

The difficulty can be overcome by modifying Kant's conception of cognitive experience. Instead of holding that every cognitive experience *is* a judgment that something is the case, according to this modified conception every cognitive experience is either a judgment *or is such as to presuppose or involve judgments*. In asking questions, issuing orders, entertaining ideas etc. we always (and necessarily) presuppose that certain things are the case – otherwise the words we utter would be *empty* words, mere sounds uttered without understanding – and these presuppositions are of the general nature of *judgments*, judgments that certain things are the case, and it is *as if* we had antecedently made these judgments. Let us take the case of *naming*, of naming a ship say, as a representative example. The Queen is to name a ship. She takes it to be the case that what is before her is a ship that is to be named, that she is authorised to name it, that the time and place are right, and so on, and, if we are willing to stretch the usual meaning of the verb "to judge" a great deal, then we may say that she *judges* these things to be the case. Not that the Queen need think to herself, 'here is the ship that is to be named', or 'I am the person authorised to name this vessel'. She has merely *to take it to be the case that* the ship before her is to be named, that she is authorised to name it, as well as many other things, such as that a bomb-alert has not just gone out.[167]

Our next question is this: supposing that the Queen takes it to be the case that everything that has to be the case if she is to name the ship is the case, and that she therefore takes it to be the case that the time has come to go through the ship-naming ceremony, what do her various 'taking certain things to be the case' amount to? What do such 'cognitive takings' entail, involve or presuppose?[168] The answer in short is that she be disposed to say or do, or to refrain from saying or doing, any of indefinitely many different kinds of things

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[167] We prescind here from the question of whether she is right or not in taking to be the case what must or should be the case if she is to name the ship – correctly performing the exercitive. We also prescind from what ought to be said if the objective conditions are as they should be but that, mistakenly, she thinks something is wrong yet nevertheless goes ahead and says the words "I name this ship..." Our focus here is on the ordinary case.

168 My use of italics and quotation marks here and elsewhere is because ordinary language is ill-equipped to cope with the sort of enquiry we are engaged in.

depending upon what *else* might happen in the immediate future. If, for example, an official were to say to her that the ship is to be given a different name from the one she had been told about earlier then she might respond in any of an indefinite number of different ways, depending on the credentials of the official as well as many other things.[169] That she takes what is before her to be a ship and not a wood and cardboard mock-up entails that she be disposed to respond to future contingencies, by word, gesture, demeanor or otherwise, in any of indefinitely many different ways, ways that would be *different* from how she would respond were she to take what is before her as a full-scale wood and cardboard mock-up.

It is claimed that the behavioural dispositions which underpin those 'taking certain things to be the case' on the part of the Queen that are presupposed by or involved in her naming of the ship are such as to entail her being disposed to behave in any of *indefinitely* many different ways in the light of future contingencies. To describe each and every one of these ways completely, precisely and unambiguously would appear to be impossible, and even to attempt such a description smacks of absurdity. This may well seem remarkable. It is remarkable, though the kinds of dispositions spoken of are part and parcel of every moment throughout our waking lives. That something could exist with a character that is both distinctive (as our different dispositions are) *and* unspecifiable (the open-ended character of our dispositions) goes against most people's intuitions. There are profound ontological implications in the offing here. For the time being, though, the claim is only to have shown that there is a line of argument from Kant's conception of cognitive experience as judgment to the conception of cognitive experience as essentially a matter of having behavioural dispositions of the character – at once distinctive yet indefinite – that I have been trying to convey.

To summarise: it has been argued that Kant's view that cognitive experience *is* judgment is mistaken. The speech-act examples show this. Nonetheless, cognitive experience involves or presupposes that the person

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[169] She might chide the official for not bringing this to her attention earlier; she might nod her head in calm acceptance; she might ask what the reason for the change is; she might request he double check that what he has just told her is indeed the case; she might ignore him because she prefers the earlier name, and after all, she is the Queen and it is her ship, etc.

concerned takes certain things to be the case[170], and these 'cognitive takings' may be thought of as judgments – judgments, though, without any implication that the person concerned has actually carried out any *acts* of judging. The ship-naming example does not support the picture of the mind as a hive of *activity*. Rather, the example suggests that our 'cognitive takings' are behavioural dispositions of the distinctive yet indefinite character discussed above.

In his analysis of cognitive experience Kant takes it for granted that we are speaking of *our* cognitive experience[171]: the cognitive experience of animals, infants and very young children are not considered. This is certainly a serious limitation, though the limitation is remediable. For Kant's conception of cognitive experience as judgment *can* be applied to animals, infants or very young children and when it is it has no less merit than when it is applied to human adults. It is not overstating things to say that a mouse takes the cat which it has just seen out of the corner of its eye to be a danger: the mouse's behaviour is informed by the fact that there is a cat in its vicinity, and the mouse could manifest its cognitive grasp of this fact in all kinds of different ways in the light of the cat's forthcoming behaviour, or of the sudden arrival of a dog, for example. As with the Queen in our ship-naming example, the mouse's cognitive experience involves its being disposed to behave in any of indefinitely many different ways depending on future contingencies.[172] Considered sufficiently abstractly, the two cases illustrate the same thing. In neither case need anything like a judgment actually be made: no inner *action* need be carried out. But in each case something like a judgment – in a very broad sense of the word – is implicit in the behavioural dispositions of the agent concerned. If Kant's conception of cognitive experience is modified in some such way as has been suggested then it can be easily enough extended to cognition in animals, infants and very young children.

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170 This is true even of the cognitive experiences of entertaining an idea or supposing something for the sake of argument. For such entertainings and supposings would lose all their cognitive significance unless on *other* occasions we made judgments as to what is or is not the case.

171 Except when he is drawing a comparison with the supposed possible purely intuitive cognitive experience of God.

172 Of course, the behavioural dispositions of a mouse are more limited than that of a human being but, the claim is, its behavioural dispositions are nonetheless unable to be completely and unambiguously specified.

We may think of a person's judgments, in the broad sense of her taking of certain things to be the case, as cognitive syntheses which encompass and bring together the three kinds of connections already identified from chapters two, three and four – namely, present-past connections, present-future connections and present-present connections, respectively. It should be remembered, of course, that the present-future connections spoken of are the *possible* connections any of which the person *might* make in the future as constitutive of *future* cognitive syntheses – or judgments in this broad sense.

2) Objectivity, Truth and Relevance

What will now be examined is Kant's attempt to demarcate the objective from the subjective by identifying only the former as a referent of judgments. It is argued that Kant has made no provision within his philosophy for subjective judgments – as distinct from mere feelings – or for the fact that although particular judgments may be either true or false there is nonetheless a necessary (a conceptual) connection between judging that something is the case and truth. This undermines the deep division within Kant's philosophy between pure and practical reason

Kant not only uses the idea of 'judgment' in explicating cognitive experience, he also uses the idea in demarcating the merely subjective from what he calls "objective validity". At B142 he says that a judgment is:

> "...a relation which is *objectively valid*, and so can be adequately distinguished from a relation of the same representations that would have only subjective validity – as when they are connected according to laws of association. In the latter case, all that I could say would be, 'If I support a body, I feel an impression of weight'; I could not say, 'It, the body, is heavy'. Thus to say, 'The body is heavy' is not merely to state that the two representations have always been conjoined in my perception, however often that perception be repeated; what we are asserting is that they are combined *in the object*, no matter what the state of the subject may be."

Now there is indeed a gulf between saying, whether truly or falsely, that if I support a body I feel an impression of weight and saying, again whether truly or falsely, that it, i.e. the body, is heavy. In Kant's philosophy of transcendental idealism the gulf is bridged by the understanding, the application of which to subjective impressions yields judgments about objective reality. Only in this way, according to Kant, can the gulf be bridged.

What Kant calls “objective validity”, then, is always the outcome of a judgment, and cognitive experience in the full sense of the word is confined to such 'objectivity conferring' judgments. This scenario is no mere adjunct to Kant's transcendental idealism: it essentially defines it. Bridging the gulf between the utterly subjective and objective reality is what transcendental idealism is all about.

The first criticism of the above 'bridging' scenario is that there are perfectly good examples of judgments that pertain to utterly subjective matters, and I have not anywhere found an explanation, nor can I see how there could *be* an explanation, as to how this is possible if, as Kant maintains, to judge is *ipso facto* to confer objectivity on what is judged. For example, in response to someone's remarking upon my unhappy look I might say that I have a headache, adding that it is the worst headache that I have ever had. Now my added comment expresses a judgment. So if, as Kant maintains, to judge is to confer objectivity on what is judged then my judgment is *ipso facto* an *objective* judgment. But nobody other than myself can tell whether it is true or not, so it is a *subjective judgment*. Kant's theory of judgment needs to be modified so as to allow for subjective as well as objective judgments, with both being distinct from the mere expressing of our feelings. I shall not venture here to suggest how this might be done.[173]

There is a more serious criticism of Kant's bridging scenario. In everyday life we of course allow that our judgments may be true or false, correct or incorrect. Nonetheless, we do not account the truth or falsity of judgments as altogether *irrelevant* to their being judgments. Suppose, for example, that there is a young child who has sufficient mastery of English to be able to utter grammatically correct sentences, these sentences being such that normally their utterance would be accounted judgments, but that when they are taken to be judgments – statements, assertions etc. – the judgments in question are always found to be false. In such a case we would say that the child's utterances are not *judgments* – statements, assertions etc. – after all. We would certainly set little store by the statements of an incorrigible liar and if

[173] Douglas Burnham points out that in a sense even our subjective judgments are objective, in that although other people cannot verify them they can – through speaking with us – clarify what they mean. See Burnham, op. cit. p. 25.

we imagine that, interpreted as statements, everything a person says is false then we would set no store whatsoever by his utterances: in no sense would we account them judgments. These examples bring out an important fact about our ordinary – pre-theoretical – conception of judgment, viz. that *notwithstanding* that judgments may be true or false, there is a necessary (a conceptual) connection between our accounting the utterance of certain words *as* judgments and truth. In other words, the fact that a particular judgment may be true or false is a misleading guide as to what a judgment is for us. In propositional logic – the logic pertaining to the statement connectives "and", "or", etc. – there is nothing to stop us from always assigning the truth value „false' to every p, q, r, etc. and doing so would not impugn the status of these variables as *statement* variables. Not so in everyday life. *Here* it is a *sine qua non* of our utterances being statements that 'to a significant extent' they are true.

Kant's conception of judgment is not informed by the foregoing consideration. It does not follow the ordinary usage of the words "judge", "state", "assert", etc., and, as I hope is evident, ordinary usage here is what is needed. For Kant, judgments play the transcendental role of bridging the gap between the pure subjectiveness of sensibility and the objective validity of cognitive experience, so until this gap has been bridged *the question of whether the bridging judgments are true or not cannot arise*. But, as I have tried to show, this latter question is not conceptually separable from whether what is supposed to bridge the gap are indeed judgments. Kant has a deep division between the transcendental issue of objectivity on the one hand and the empirical issues regarding truth on the other. This, I suggest, may be called "the fallacy of misplaced partitioning".

This conclusion may be viewed in a more positive spirit. For the general ability-cum-propensity to distinguish the true from the false, which our ability to make judgments presupposes and involves, itself presupposes and involves the ability-cum-propensity to take into account a multitude of indefinitely many different things in indefinitely many contexts. We have here, as a sort of underpinning of language itself, a disposition (though it is more accurate to call it an ability-cum-propensity) of the same remarkable character as has been spoken of repeatedly before, a disposition, that is, which has every

appearance of being unspecifiable or open-ended, of not being describable in a way that is both comprehensive and detailed.

The ability to make judgments presupposes or involves more than just the ability-cum-propensity to distinguish the true from the false. *It also presupposes or involves the ability-cum-propensity to make appropriate, and to avoid making inappropriate, judgments*. By an appropriate judgment I mean one which, whether true or false, it would be reasonable to make in the circumstances prevailing. Consider the following modification to our example of the unfortunate child whose utterances are syntactically correct English sentences but which never express true statements. Now at first sight the child's utterances do appear to express true statements. But we soon discover that what appear to be genuine statements never have any bearing whatsoever on whatever matter might be at hand and are always utterly irrelevant to any concerns or interests that we either have or can imagine ourselves having. In the widest sense of the word "practical", the child's utterances never have even the slightest practical significance, they never fit in any meaningful way with anything she has previously said or done or with anything anyone else she has said or done.[174] In such a case, I submit, we should not take the child's utterances to be *statements* at all; for their utterance points to such a tragic deficiency of thought that to speak of anything like judgments here would be a misuse of the word. It follows that Kant's deep theoretical division between the purely cognitive – what he calls pure reason (the concern of his first Critique) – and the cognitive in its application to our concerns and interests, and pre-eminently including morality – what he calls practical reason (the concern of his second Critique) – is misplaced. Again he is guilty of the fallacy of misplaced partitioning.

This is not to deny that we may distinguish between pure and practical reason. But it is a distinction of significance only for various (practical) concerns or interests. It has no *fundamental* significance. If, like Kant, one is attempting a "*dissection of the faculty of understanding itself*" [B90] then (as

174 Randomly picking out sentences from an encyclopaedia would be a less severe analogue of this, though even here I do not think that we should call the 'outpourings' *judgments*.

Wittgenstein came to realise) one will find oneself obliged to take into account human life as a whole, that is to say, its overall character together with such detail as may be deemed necessary or desirable.[175]

This conclusion may also be viewed in a more positive spirit. For the general ability-cum-propensity, which human language presupposes and involves, to distinguish between what is relevant and what is irrelevant to whether the making of a particular statement is called for or is reasonable or justifiable in the prevailing circumstances, itself presupposes and involves – once again – the ability-cum-propensity to take into account a multitude of indefinitely many different things in indefinitely many contexts. In that it has every appearance of having no definable limits this ability-cum-propensity is of the same nature as that which underpins our ability to distinguish the true from the false.

As we go through life we are continually taking certain things to be the case and by and large these cognitive takings are more or less correct or if they are not correct then they at least generally make sense given our previous cognitive takings. Out of the indefinitely many possible present-past, present-present and present-future connections that a person's syntheses might *conceivably* encompass the vast majority would be so inappropriate as to rule them out as *cognitive* syntheses, as syntheses of the *understanding*. It is constitutive of the syntheses of the understanding that by and large they encompass not only what is true but also what is relevant to our lives. Allan Wood reminds us that Kant's avowed purpose in writing his Critique of Judgment is to bridge a gap – indeed, what he perceived as a yawning gulf – between his treatments of theoretical and practical reason, "and thereby to unify his philosophical system."[176] My point is that the very existence of a gulf here shows that something is wrong.

3) Causality in Kant's Theory of Judgment

The philosophy that Kant sets out in his first Critique is founded upon his theory of judgment. But the latter is more than just presupposed. Most of what Kant has to say, and all that is distinctive of his philosophy, is implicit in

175 L. Wittgenstein, Philosophical Investigations, trans. Anscombe, G.E.M. (1958)
176 Wood, op. cit. p. 151.

his theory of judgment and Kant's task is essentially that of making this explicit. Kant presents his theory of judgment in several places: when introducing the second part of his transcendental doctrine of elements [B74-75]; when introducing the necessary background for understanding the rationale for his table of categories [B92-94]; during his transcendental deduction of the categories [B141-142]; and when introducing his analytic of principles [B171]. For present purposes consideration of the first and the last of these is sufficient. Kant states his theory in a 'this is how it is' manner, without discussing any criticisms that might be raised[177], and to this extent the task of constructive criticism is made easier than it would have been otherwise. But it is nevertheless difficult. Apart from the theory-laden nature of Kant's thought, epitomised in his use of the word "representation", there is the difficulty of separating what is really – I shall argue – empirical hypothesis from genuine analysis, or better, explication, in his theory of judgment.[178]

(A) Affection and Production in Kant's Theory of Judgment

Kant begins his introduction to the second part of his transcendental doctrine of elements with the following statement:

> "Our knowledge springs from two fundamental sources of the mind ; the first is the capacity of receiving representations (receptivity of impressions), the second is the power of knowing an object through these representations (spontaneity [in the production of] concepts.) [B 74]

Kant is speaking here not of all our knowledge but only of our empirical knowledge, for our knowledge of arithmetic, for example, does not appear to spring even in part from Kant's first source. The following is offered as an example against which Kant's statement can be tested. I look out of the window and see that it is raining.[179] I have just acquired the knowledge that it

177 The theory's fruitfulness, that its acceptance allows many of the difficulties that have arisen in philosophy to be resolved, might (reasonably) be cited as a reason for its acceptance.
178 Kant himself stoutly denied that he was engaging here in scientific psychology.
179 At B173 Kant acknowledges that "one great benefit of examples" is that it helps to sharpen one's judgment, by which he means the ability to comprehend particular cases under the right rules. He then adds, "Correctness and precision of intellectual insight, on the other hand, they more usually somewhat impair." The former is surely true without qualification, except that Kant's conception of judgment itself if unsatisfactory. The latter, though, we now know – largely as a result of the work of Wittgenstein, Ryle and Austin – is not true without, to say the least, a great deal of qualification. That considering examples could impair the *correctness* of one's intellectual insight is incredible, and as for *precision*, the consideration of

is raining outside. Kant says that all our knowledge springs from two sources, the sources that he defines using the words "representation", "impressions", and "concepts". Can these two sources be identified in the case of this example? As for the first source, I have sometimes, it is true, looked out of the window when it is raining without my seeing *that* it is raining. So my looking out of the window is not a sufficient condition of my knowing that it is raining outside. Nor, without qualification, is it a necessary condition, for I may know that it is raining outside because I have been told that it is by someone whom, in the circumstances, I have no reason to doubt. But, suitably qualified, my looking out of the window *is* a necessary condition of my knowing that it is raining outside – if I am alone, if I can hear no patter such as of rain, etc. So, suitably qualified, my looking out of the window is a necessary, but not a sufficient, condition of my knowing that it is raining outside.

What does what Kant says about representations, in particular about the sort of representations involved in his first source of knowledge – namely, impressions – add to our example? Although Kant certainly does not intend it as such, his words are most naturally taken as stating an empirical hypothesis. The rain that I see is not an impression, nor are any of the physiological changes associated with or consequent upon my seeing the rain. The only plausible candidate for an impression is an image; but I experienced no images when I looked out of the window and saw that it was raining, and *had* I experienced any this might have confused me, perhaps making me inclined to doubt the evidence of my own eyes. Nonetheless, there is nothing to prevent a theorist in cognitive psychology from *postulating* the existence of impressions as hypothetical occurrences involved in the mind's hypothetical workings.[180]

In parentheses Kant characterises the two sources of knowledge as "receptivity of impressions" and "spontaneity [in the production] of concepts", respectively. Here, I think, we are on more promising ground. Whatever

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examples is a corrective (pace Aristotle) to any tendency to seek or assume more precision than the subject matter warrants.

180 Even so, if impressions are representations then presumably they represent something, i.e. mean or signify something, and this presupposes understanding, the very thing that the postulation of impressions is supposed to help explain. The postulation of their existence is to this extent question-begging. However, the example of a bar-magnet as made up of a lot of tiny magnets shows that this criticism is not such as to rule out impressions as theoretically defined occurrences.

qualifications may be called for, it is surely undeniable that cognitive experience and empirical knowledge presuppose both a receptive capacity through which things are given to us and a spontaneous power through exercising which we make judgments in regard to at least some of these things that we are given. (The vagueness inherent in the word "things" here is precisely what makes its use appropriate.) Kant's next statement after the one just discussed shows that the above is what he has in mind:

> "Through the first an object is *given* to us, through the second the object is *thought* in relation to that [given] representation (which is a mere determination of the mind)." (B74)

It is interesting to consider this statement together with the statement with which Kant begins his next paragraph:

> "If the *receptivity* of the mind, its power of receiving representations in so far as it is in any wise affected, is to be entitled sensibility, then the mind's power of producing representations from itself, the *spontaneity* of knowledge, should be called the understanding." (B75)

Both statements say that it is through the mind's receptivity that we are given the raw material for cognition. Kant's second B74 statement says no more than this, but his B75 statement adds that insofar as we are given this raw material for cognition we are thus far affected by something or somethings. The mind's receptivity is thus a *capacity to be affected* – affected indeed by things-in-themselves, to use Kant's language.

As regards the mind's spontaneity, Kant's B75 statement defines this as a *power of production*, namely, as "the mind's power of producing representations from itself". It can be seen from his first B74 statement that the representations Kant refers to are concepts, and this point shall be returned to later – in section (B). But I would like here to draw attention to the following fact. In his second B74 statement what Kant says entails that the spontaneity of the mind's power of producing representations from itself is not an absolute spontaneity. For there he says, in effect, that through the spontaneity [in the production] of concepts we have thoughts *in relation to the raw material of cognition that is given to us*, and this would be impossible unless our mind's spontaneity in its power of production could be *affected* by the raw material of cognition that is given to us. So, the mind's power of production is *also*, like

its receptive capacity, a capacity to be affected by things. For otherwise our cognitive productions – judgments – would have no connection with how we have been affected through our receptive capacity. So far as I know Kant never draws this inference, but it is implicit in his B74 and B75 statements that we have been examining.

In speaking 1) of the mind's *receptivity*, i.e. its capacity for being affected – by things-in-themselves, and 2) of its *spontaneity*, i.e. its power of production – of judgments, Kant seems to imply that we have here two distinct faculties, which, when working properly, provide us with empirical knowledge. But the foregoing analysis shows that if the mind's spontaneity is to do its job properly – indeed if it is to do its job at all – then it must *also* be a capacity for being affected by the raw material of cognition, whatever this 'raw material' may be or however it is to be understood. So we are faced with a duplication of faculties. What has been presented as the mind's faculty of receptivity is simply duplicated within the mind's power of cognitive production as the latter's capacity to be so *affected* by what is given to it as to ensure that its productions – judgments – are *appropriate* in relation thereto. And our cognitive productions *must*, by and large, be appropriately related to what is given to our power of production because otherwise we would account them not *cognitive* productions, i.e. productions that evince understanding, but mere random outpourings. The obvious conclusion is that the mind is not a combination of two faculties but is instead a single faculty with, so to speak, two sides to it. On the one hand it is receptive, namely it has the capacity to be affected by the raw material of cognition – whatever this may be or however it is to be understood; and on the other hand it is productive, namely it has the power to produce what (broadly speaking) we may call judgments, that are so related to what has been given to it that we deem them to evince understanding.

These inferences, it is argued, are implicit in Kant's own words. Nor do these words express thoughts merely incidental to his philosophy: they are as central to it as can be. That Kant does not draw the inferences himself is understandable enough. For if the conception – the word “notion” is perhaps more fitting – of causality implicit in the statements from B74 and B75 that we have been examining were to be interpreted, in accordance with Kant's schematised category of causality, as 'rule-governed succession' then the

repercussions would undermine Kant's account of freedom and morals. Also, the inferences sit uneasily with Kant's view that we can know nothing of things-in-themselves.[181] In sum, the mind is not a compound of two faculties – a receptive faculty and a productive faculty. Rather, the mind has two sides to it, a receptive and a productive side. The change from speaking of faculties to sides might not look like much but it is. For it carries with it the thought that the mind, if abstractly considered, is that whose productions – broadly, judgments – are so related to the way it has been affected by things – its affections – that we deem these productions to evince understanding. In other words, the causal connections mediated by the mind and which define it *as* a mind are such that their causal character can only be recognised through understanding that causes (our affections) are related to effects (our cognitive productions) *in ways that evince understanding*. The ‚pragmatic ties' spoken of in chapter 5 are a paradigm example of this.

B) Concepts and Judgments

When introducing the Analytic of Principles Kant makes the following statement:

> "If understanding in general is to be viewed as the faculty of rules, judgment will be the faculty of subsuming under rules ; that is, of distinguishing whether something does or does not stand under a given rule (*casus datae legis*)." (B171)

The rules that Kant refers to here are rules for the correct application of concepts. He takes it for granted that there must be such rules. Kant's statement is remarkable both for its succinctness and for its not speaking of 'representations'. Essentially, it gives Kant's analysis of cognitive experience without any admixture of empirical hypothesis. Supplemented where necessary from other sources this makes it suitable for the kind of constructive criticism being undertaken here. Is it true that to make a judgment in Kant's wide sense of the word is the same things as to subsume what is given to us through sensibility under a rule, that is to say, under a concept? According to

[181] The relevance of the foregoing may be noted to the claim, defended in chapter one, that in general we can just *tell* when what has been given to us through sensibility constitutes an event.

Kant's statement that has been quoted from B171 the answer is, yes. As Allison puts it, "Every judgment, for Kant, involves an act of conceptualization, and vice versa."[182] It follows that for Kant an act of conceptualisation is a sufficient condition for making a judgment. The earlier example of seeing that it is raining immediately suggests a counter-example. For we can perfectly well think of, in the sense of bringing to mind, the idea of rain as such, without hereby making any judgment. To *think* of rain is not to make a *judgment*, whether about rain or about anything else.[183] The latter would evince Kant's miscalled (as I have argued) category of Quality – it would affirm something – whereas the former does not. Conceptualising as such, then, is something less than judging that something is or is not the case. It is simply not true, as Kant states in the "Wiener Logik" that "If one thinks two representations as bound together as cognitions and as thereby constituting a single cognition [eine Erkenntniss], then that is a judgment"[184]: I can think of red in general, then of roofs in general, then join the thoughts up to think of red roofs in general, but this does not constitute a judgment or bring me any closer to making one

When introducing the rationale behind his table of categories Kant says that, "Whereas all intuitions, as sensible, rest on affections, concepts rest on functions", and that, "By 'function' I mean the unity of the act of bringing various representations under one common representation" [B 93]. Now whatever Kant means by the "unity of the act" he gives us no reason to think, when he goes on to say that, "all judgments are functions of unity among our representations"[185], that the two unities he speaks of are one and the same. Roughly speaking, concepts correspond to words (and descriptive phrases) and judgments to sentences, and word-meaning is something very different from sentence-meaning. Because sentences are made up of words, the meaning of a sentence depending on the meanings of its constituent words, there may be a temptation to think that the statement (judgment) conveyed by a sentence we

182 Allison, (1983) op. cit. p. 69.
183 Although, as I have already argued, such an *entertaining* of a thought *presupposes* judgments that we have made as to what we take to be the case about all kinds of things: without this presupposed background – a sort of backdrop – our utterances would be nothing but outpourings of meaningless sounds.
184 AK XXIV, 928, quoted in Allison, op. cit. p. 69.
185 Critique of Pure Reason B 93

utter is somehow *derived* from, i.e. determined (completely) by, the concepts corresponding to its constituent words. Thus we arrive at the thought that concepts are primary and judgments derivative. But this conclusion is incorrect. For one thing we can only test whether someone has an understanding of a given concept by seeing whether he can evince this understanding in his judgments. For another thing we can learn or form new concepts in making a judgment. For example, a child who eats a strange berry and is subsequently sick learns that this *kind* of berry is poisonous: she learns a new concept. Were empirical experience insofar as it involves judgment limited, as Kant's theory of judgment asserts, to what we can subsume under concepts, then we could never move beyond whatever concepts we already have in our repertoire. Whenever we make a judgment that pertains to whether, or to how much, something, A, is more like something else, B, than it is like a third thing, C, we go beyond what Kant's theory of judgment takes into account. Such judgments were discussed at some length in chapter three when discussing the Anticipations of Perception.

The foregoing considerations are intended to show that it is a mistake to think of judgments as a sort of product of acts of conceptualisation. And it is also a mistake to think that between our being affected by what is given to us through sensibility and our coming up with a judgment regarding it there must occur certain *acts* of conceptualisation. This is not to deny the evident truth that when we make a judgment we *evince* our understanding of various concepts, but we have no reason to suppose that the concepts the understanding of which we evince necessarily figure in any (inner) *actions* on our part. Indeed, all appearances are against this: when I see that it is raining, this judgment simply comes to me, so to speak, without my being aware of having performed any work to come by it. Because there is so much 'to' a judgment, specifically, in regard to the apparent infinitude of behavioural dispositions which underpin it that was discussed earlier, to suppose that our coming to the judgment is *not* mediated by any (inner) activity might, to some people, seem amazing. It might even seem like magic. This latter response, though, would be justified only if judgments were, or at least were closely analogous to, complex physical structures – presumably complex physical structures in the brain. But without this materialist picture the idea of our

cognitive experience as *evincing* judgments which are not the outcome of any *act* of judging no longer has to be thought of as magical, though it remains remarkable.

There is another point to consider concerning Kant's (B171) statement. Kant says that "judgment will be the faculty of subsuming under rules ; that is, of distinguishing whether something does or does not stand under a given rule..."[186]. By "rules" here Kant means concepts, for his conception of a concept is 'that under which things are subsumed in accordance with a rule'. My concern here is with the last phrase of Kant's statement, namely – and the italics are mine – "*of distinguishing whether something does or does not stand under a given rule*." Now when I look out of the window and see – judge – that it is raining, is the concept of rain antecedently present in my mind and do I then match what is available to me through my eyes to this antecedently given concept? Of course not. Kant has what Austin calls "the onus of match" the wrong way around.[187] In judging as I do I do not match what is available to me through my eyes to a *given* concept, rather I match the concept of rain – which is not given to me but is evinced in my judgment – to what is available to me through my eyes. The latter is a much more remarkable accomplishment than the former because there are limitlessly many concepts from which to choose the correct match for whatever is available to me through sensibility. For there are as many possible concepts to choose from as there are words and phrases that I can understand. How, it might be asked, can one pick out from such an infinitude a suitable concept to match one's 'affections' through sensibility? I suggest that the question betrays a mistaken preconception, namely, that making a judgment is a product or outcome of some kind of activity. Were this true the question would cry out for an answer, but if, as I am suggesting, a judgment is not an outcome of any kind of activity then the question does not arise.

There is a final criticism of Kant's statement to be made, and in the light of Wittgenstein's later philosophy it is rather obvious: to say that the application of concepts to the things that fall under them is rule-governed is

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186 The words "that is" here are off-putting, for, of course, to subsume under a rule is not the same thing as to distinguish whether something does or does not stand under a given rule.
187 J. L. Austin, Philosophical Papers (Oxford: Clarendon Press, 1961) pp. 188-9, in the chapter 'How to Talk: Some Simple Ways'.

often plain false – as in the case of games – and is always liable to be misleading. It is often plain false because, as Wittgenstein's famous games example shows, we can formulate no rule the following of which would ensure that if and only if anything is a game we will pick it out.[188] It is always liable to be misleading because understanding cannot be *explained* as the application of concepts to things in accordance with rules because it is a precondition of our applying concepts to things in accordance with rules that we *understand* when and when not the concept is applicable. In short, rule-following is derivative of understanding, not vice-versa. Again, we find that the attempt to get behind understanding to reach that which supposedly produces or generates it fails.

(C) Receptivity and Spontaneity in Cognitive Experience

Recalling the ship-naming example (pp. 3-5 of this chapter), let us suppose that the behavioural dispositions that are constitutive of our understanding something, e.g. what has just been said to us, really are, as they appear to be, unspecifiable, open-ended or indefinite in character. In other words let us suppose that it would be impossible in principle fully to describe, or even to describe anywhere near fully, what the behavioural dispositions – propensities and readinesses – are that we have acquired in virtue of our having understood what someone has just said to us. To suppose this is not, I think, to suppose anything that we have any reason to think is logically impossible: what is being envisaged does not seem to involve any inconsistency. Indeed, that the behavioural dispositions we are speaking of are of the above character is, it seems, much *more* than a bare logical possibility, for it certainly appears to be the case – upon reflection – that these dispositions are open-ended in their range and variety.

When I understand something, e.g. your statement that it is raining, I therein undergo a change on the 'spontaneous' or productive side of cognition, a change, that is, in my dispositional 'state': from not being at all pre-disposed to speak of the weather, climate etc. I suddenly become precisely so disposed.

188 Wittgenstein, op. cit. Part 1, 66, pp. 31-32. What also requires emphasis about this excellent example is that *nevertheless* there is general agreement on what is a game and what is not: the school-teacher can rely on her pupils understanding the rule, 'no games are to be played in your free period.'

Within a second or so there occurs what may be called a “dispositional shift”, a shift from a rather *inchoate* dispositional state to a much more *distinctive*, though still unspecifiable (we are supposing), dispositional state. And the dispositional shift happens, I take it, *because* of what you have said in my presence. It is my hearing of your words that *causes* the shift. So the question arises of whether Kant's theory of cognitive experience as the outcome of, or as being constituted by, the carrying out of successive acts of judgment – the work of our faculty of spontaneity – on the offerings of sensibility can account for such a shift from one unspecifiable dispositional state to another quite different unspecifiable dispositional state. Whatever else may truly be said about them our bodily actions are bodily movements, and, apart from qualifications with regard to Heisenberg's indeterminacy principle – which in the present context are irrelevant – there is nothing indefinite or unspecifiable about our bodily movements: they can be described with very great accuracy in terms of Newtonian mechanics, the very paradigm of a language for providing complete and precise descriptions of what it is applicable to. I take it, therefore, that the same would be true of the (supposed) *inner* actions of the workings of Kant's faculty of spontaneity. For were they otherwise there would be no reason to speak of them as *actions*, i.e. as the productions of our faculty of spontaneity, namely, the subsuming of that which is given to us through sensibility under concepts. But then although these (supposed) inner actions would on Kant's account play a *necessary* role in enabling us to understand something – anything – the carrying out of that role would not *suffice* for our understanding it; for the behavioural dispositions constitutive of our understanding something being *ex hypothesi* unspecifiable in character they could not arise from anything whose timing and character *could* in principle be spelt out, as would be the case with our inner actions.

The answer to our question therefore is, no. If, as is being supposed, the behavioural dispositions that are constitutive of our understanding something really are unspecifiable in character then Kant's account of understanding as the outcome of (or as being constituted by) our carrying out inner *actions* on what is offered to us through sensibility fails. And the reason for this has nothing to do with the details of Kant's account. It has to do only with the point that because it is analytically true that actions, qua movements,

whether outer or inner, are necessarily of a *definite* or *specifiable* character they therefore cannot generate the *in*definite or *un*specifiable character of the behavioural dispositions that, it is being supposed, are constitutive of our understanding things. So, if the initial supposition is correct, the idea that the causation of our understanding something – anything – necessarily involves our carrying out certain inner *actions* has to be abandoned. Now the initial supposition is not unreasonable: it deserves, as I have said, serious consideration because it respects *appearances*, namely, the apparently indefinite or unspecifiable character of the behavioural dispositions constitutive of one's understanding something. I think we are therefore obliged to take seriously the idea that our understanding of things is a manifestation of the receptive side of our cognitive faculty alone. The idea I speak of is nothing like that of Hume's impressions; for our understanding of anything would be constituted not just by such and such having been offered to us through sensibility, but by such and such that has been offered to us through sensibility *causing us to have* such and such – indefinite or unspecifiable – behavioural dispositions.

Our everyday experience of understanding things is in keeping with the idea that the causation of the shifts in our behavioural dispositions that are part and parcel of our understanding the changes that are going on around us (e.g. when someone speaks to us) or that we ourselves are bringing about (e.g. when we are reading) is a function primarily of the receptive side of cognition. For the most part we understand what we see or hear without our having to make any *effort* to do so. Sometimes, it is true, we may not understand a sentence when we hear it spoken or see it written for the first time and we may 'go over it in our minds' in order to understand it; but this just means that we repeat the sentence or parts of it to ourselves, or that we dwell on it as we would not usually do: understanding, if it comes at all, comes, so to speak, unbidden, i.e. we simply find that we now understand what a moment ago we did not. Maybe too there are some things that we could not understand unless we had certain abilities to behave in certain ways. For example, our ability to *understand* sentences involving certain kinds of grammatical constructions might depend on our ability to *speak* using these same or related grammatical constructions. All this I readily acknowledge. My suggestion is simply that we

should take seriously the idea that primarily and for the most part the causation of the shifts in our behavioural dispositions that are constitutive of our understanding the changes going on around us or that we ourselves bring about falls on the receptive side of cognition.

Let us pursue this idea a little further. If indeed the behavioural dispositions constitutive of understanding are indefinite or unspecifiable in character then, given that the indefinite or unspecifiable cannot be derived from the definite or specifiable, their causation would also have to be of an indefinite or unspecifiable character. What was said in the latter part of chapter five has, I hope, already paved the way for this possibility to be taken seriously. Again, what is being envisaged is, I believe, in keeping with our everyday experience. If, for example, I answer a question that has been put to me then my utterance of the words in which my answer is framed is caused in part by my hearing the words in which the question was framed. But only in part, for my answering the question as I did was causally dependent on innumerable *other* things, on more things indeed than can be named. For it is undeniable *that* we draw upon all of our past experience when making our pragmatic ties even though we seldom know much about exactly *what* experiences we draw upon.[189] And this suggests that the causal antecedents of my answering the question as I did could not, even in principle, be fully, or indeed be anywhere near fully, specified. It suggests, therefore, that the causal antecedents of my *understanding* the question that I was asked could not be fully, or be anywhere near fully, specified. In other words, it suggests that the causation of my understanding here is of an indefinite or unspecifiable character.

[189] What I mean is this (in relation to the example of my answering a question): everything that has ever happened to me has got me to this particular situation I am now in, and any and all of this is connected with how I might answer the question. Of course, at an „everyday level', some of my past experiences might be particularly pertinent to how I answer the question, while other experiences are so indirectly related as to be – for all intents and purposes – irrelevant. But, at a deeper level, all my experiences are relevant because they are all connected, and thus they are all drawn upon. Under the paradigm here suggested, there is a holism (or interconnectedness) to my psychological states not just in the present moment, but to my entire past as well.

The arguments of chapter eight support the claim that what has been envisaged in this chapter is indeed the case. Here, though, I have been arguing only that what has been envisaged should be taken seriously as a possibility.

Chapter 7

Kant's Third Antinomy

Kant's third antinomy comprises a thesis and its antithesis, for both of which Kant proffers a proof. Kant states the antithesis as follows:

> "There is no freedom; everything in the world takes place solely in accordance with the laws of nature." [B473]

On *a priori* grounds he argues that this is true. Kant states the thesis as follows:

> "Causality in accordance with the laws of nature is not the only causality from which the appearances of the world can one and all be derived. To explain these appearances it is necessary to assume that there is also another causality, that of freedom." [B473]

Again on *a priori* grounds Kant argues that we are intellectually obliged to accept that this is also true, though "only in so far as it is required to make an origin of the world conceivable." Evidently, Kant's attitude towards the thesis is less straightforward than is his attitude towards the antithesis. Furthermore, the thesis as he states it is only indirectly related to what Kant is really concerned with in his third antinomy, which is the problem of determinism and free-will. Having given his proofs of both the thesis and the antithesis Kant then goes on to argue that they only appear to contradict each other and that really they are entirely compatible. For, he maintains, the antithesis pertains to things only insofar as they can be the objects of empirical knowledge, whereas the thesis pertains to things only as they are in themselves.[190] Such, in brief, is Kant's treatment of his third antinomy.

Since the idea of causality in accordance with the laws of nature is easier to understand than Kant's idea of a causality of freedom, my examination of the third antinomy will begin with the antithesis. This will stand us in good stead in the next chapter, where it is argued that in the contemporary analogue of Kant's Third Antinomy the thesis should be defined as nothing other than the *negation* of the antithesis.

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[190] Does Kant hold that causal determinism and free-will are compatible? A simple yes or no answer to this question would not do justice to Kant's position, which Allison summarises as follows: "while defending the general thesis that freedom is compatible with causal determinism, which is the defining mark of compatibilism, he rejected the conception of freedom in terms of which this compatibility is usually understood." Allison, H.E, "Kant on Freedom of the Will" in Guyer (2006) op. cit. p. 399.

1) Kant's Antithesis: Universal Causal Necessity

Here is the first step of Kant's proof of the antithesis.

> "Assume that there is freedom in the transcendental sense, as a special kind of causality in accordance with which the events in the world have come about, namely, a power of absolutely beginning a series of consequences of that state;" [B473]

It is advisable to try to prescind from all the normal associations of the word "freedom". For what Kant calls the causality of freedom here is nothing other than *causality which is itself uncaused*. Kant is supposing for the purposes of his *reductio ad absurdum* argument that something more specific than what the thesis asserts is true – namely, that there is or has been at least one event the cause of which is or was itself uncaused. While, of course, Kant was alive well before the development of quantum theory, an example of something like what Kant might have in mind is afforded by radioactivity; for according to quantum theory there is no difference between the state of the radium nucleus just before its decay and its state millions of years before.

Whereas the thesis as he defines it is the logical *contradictory* of the antithesis – if either of them is false then the other is true[191] – what is asserted in Kant's first step of his proof of the antithesis is only the logical *contrary* of the antithesis: if either of the contraries is false it does not logically follow that the other contrary is true. Kant overlooks the possibility that the antithesis might be false not, as with the first step of the proof of the antithesis he assumes, because of the initiation *de novo* of causal connections but because there are causal connections that are not instances of rule-governed succession. He overlooks the possibility of precisely that kind of causality which is being explicated in this thesis.[192] Clearly, provided there is nothing incoherent about the latter his *reductio* proof of the antithesis must fail.

Kant's second step is this:

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[191] Unless a presupposition common to both is false.

[192] Hud Hudson notes that Kant has simply assumed that there are only two kinds of causality at issue and thus that he has not shown that to deny the thesis – which asserts the existence of transcendental freedom – is *ipso facto* to accept that "causality in accordance with the laws of nature is the only type of causality." H. Hudson, Kant's Compatibilism (1994), p. 21.

> "…it then follows that not only will a series have its absolute beginning in this spontaneity, but that the very determination of this spontaneity to originate the series, that is to say, the causality itself, will have an absolute beginning;" [B473]

Here, Kant takes it for granted that it makes sense to speak both of a series of events beginning spontaneously and also of the initial cause of the series being *determined* to initiate the series and thus of *its* beginning. But if it is accepted that a spontaneous cause has to begin then there is no end to it: that beginning has itself to begin, and so on *ad infinitum*, which contradicts the very idea of a spontaneous cause. A defender of the idea of spontaneous causality should simply refuse to allow that the idea of a spontaneous cause beginning makes sense, thereby preventing the regress from getting started. Kant does attempt to justify his speaking of the causality of spontaneity as being determined by something or other to act. What he goes on to say in the Critique scarcely amounts to such an attempt, but the following passage from the Prolegomena does.

> "…this determination of the cause to causality[193] must also be something *that* occurs or *happens*; the cause must have *begun to act*, for otherwise no sequence in time between the cause and the effect could be thought. The effect would have always existed, as also the causality of the cause." [53, paragraph 4]

Essentially, Kant is saying that causality in nature *must* be like this because otherwise it makes no sense. (He is, in Francis Bacon's apt phrase, trying to *anticipate* nature not *interpret* it.[194]) But, as I have said, according to quantum theory the causality of radioactivity is not as Kant holds all causality in nature must be: the state of a radium nucleus determines its *propensity* to decay; *nothing* determines if or when it decays. Evidently, the world – nature – is less amenable to *a priori* reasoning than Kant thinks it is.

Kant's third step in his argument for the antithesis is this:

> "there will be no antecedent through which this act[195], in taking place, is determined in accordance with fixed laws." [B473]

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[193] In a footnote Kant says that he here means causation, i.e. active causing.
[194] Francis Bacon, Novum Organum in Essays Civil and Moral (1914) p. 18.
[195] It is noteworthy that whereas Kant begins by speaking of the causality of freedom (= of spontaneity) as a state he now speaks of it as an act.

The remaining steps of Kant's argument may be considered together.

> "…there will be no antecedent through which this act, in taking place, is determined in accordance with fixed laws. But every beginning of action presupposes a state of the not yet acting cause; and a *dynamical* beginning of the action, if it is also a first beginning, presupposes a state which has no *causal* connection with the preceding state of the cause, that is to say, in nowise follows from it. Transcendental freedom thus stands opposed to the law of causality; and the kind of connection which it assumes as holding between the successive states of the active causes renders all unity of experience impossible. It is not to be met with in any experience, and is therefore an empty thought-entity." [B 473]

It is surprising that Kant should invoke the argument of the Second Analogy only at the end of his proof. For one wonders why Kant does not simply say from the start that the negation (i.e. the logical contradictory) of the antithesis contradicts the conclusion of the argument of the second analogy, which, once it has been accepted, warrants the rejection out of hand of the negation of the antithesis.

Kant might perhaps have been trying to come up with an argument that *supplements* the argument of the second analogy. This is suggested by what he says in the Prolegomena immediately after the passage quoted above:

> "Thus the *determination* of the cause *to act* must have arisen among appearances and must also, as well as its effect, be an event, which must have its cause in turn, and so on, and consequently natural necessity must be the condition according to which effective causes are determined." [53, paragraph 4]

Here Kant makes explicit the regress implicit in step two of his Critique argument. But, as already noted, the regress cannot get started if one stands firm by the idea of causal spontaneity as the *undetermined* outcome of a state.

Kant has to rest his case for the antithesis on the argument of the second analogy: cognitive experience would be impossible unless "everything that happens, that is, begins to be, presupposes something upon which it follows according to a rule" [A189][196] What else he says is both insufficient to establish his case and also needless: the second analogy argument alone, if sound, would establish the antithesis.

[196] The A version has been given because its wording is closer than that of the B version to the wording of the antithesis of the Third Antinomy.

2) Kant's Thesis: Some Causality of Spontaneity

The first step of Kant's proof of the thesis of his Third Antinomy at B473 is this:

> "Let us assume that there is no other causality than that in accordance with laws of nature. This being so, everything which *takes place* presupposes a preceding state upon which it inevitably follows according to a rule."

This makes it clear that the rules, i.e. the laws of nature, in accordance with which he is – for the purposes of this *reductio* argument – supposing that all changes occur are to be understood as analogous to the rules of, for example, *Snakes and Ladders* and not of *Ludo*.[197] The next step of Kant's proof is straightforward and scarcely open to doubt:

> "But the preceding state must itself be something which has taken place (having come to be in a time in which it previously was not); for if it had always existed, its consequence also would have always existed, and would not have only just arisen."

This, I take it, is self-evident. Kant's third step is this:

> "The causality of the cause through which something takes place is itself, therefore, something which has *taken place*, which again presupposes, in accordance with the law of nature, a preceding state and its causality, and this in similar manner a still earlier state, and so on."

This may be paraphrased as follows: whenever anything is caused to occur this causing itself takes time to occur, always in accordance with the principle of sufficient reason, so that we can ask in turn about what causes *it* (the causing) and so on without end. Kant's fourth step is this:

> "If, therefore, everything takes place solely in accordance with laws of nature, there will always be only a relative and never a first beginning, and consequently no completeness of the series on the side of the causes that arise the one from the other."

This would seem to be entailed by *either* the second *or* the third step. Step five is this:

[197] In both games the players' moves are required to be in accordance with rules. In *Snakes and Ladders* the rules determine what move is to be made for any given position on the board: every permissible move is also obligatory. By contrast, in *Ludo* there are many board positions where the player has to choose between two or more permissible moves.

> "But the law of nature is just this, that nothing takes place without a cause *sufficiently* determined *a priori*."

Here, I accept Allison's paraphrase, which is as follows:

> "But if this were so, then there would be no cause or ground sufficient to determine the whole, that is, no adequate explanation of the totality of appearances. This, however, contradicts the principle of sufficient reason."[198]

On Allison's interpretation Kant takes it for granted that the totality of appearances must be something that a sufficiently powerful intellect could explain. But whatever explanation be proposed it would perforce presuppose the *existence* of something and if this something is an appearance then the explanation is question-begging whereas if it is not an appearance then we are owed an explanation of what the "infinite" judgment involved here, viz. „Here is something that is not an appearance', means. Besides, Kant has not said why the totality of appearances must be amenable to the principle of sufficient reason. From this questionable fifth step Kant finally concludes:

> "The proposition that no causality is possible save in accordance with laws of nature, when taken in unlimited universality, is therefore self-contradictory; and this cannot, therefore, be regarded as the sole kind of causality." [B475]

Kant then goes on to state his thesis more fully than he had stated it at the head of his proof.

> "We must, then, assume a causality through which something takes place, the cause of which is not itself determined, in accordance with necessary[199] laws, by another antecedent to it, that is to say, an *absolute spontaneity* of the cause, whereby a series of appearances, which proceeds in accordance with laws of nature, begins *of itself*. This is transcendental freedom, without which, even in the [ordinary] course of nature, the series of appearances on the side of causes can never be complete." [B475]

Kant speaks indifferently of this causality as a causality of *spontaneity* and as a causality of *freedom*. Yet only the former description seems at all fitting for the causality whose existence Kant believes himself to have proved. For what

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[198] Allison, (1983), op. cit. p. 312 and footnote 5 p. 369.

[199] Had Kant's argument of the second analogy been correct he would have proved that *necessarily* there are laws of nature that determine the courses of events, but he would not have proved that these laws are *themselves* necessary. „Necessarily there are laws' does not mean the same thing as „the laws are necessarily what they are and not otherwise'.

has this causality to do with the freedom of the will? At most there is some analogy here with the kind of case where, in a philosophy tutorial for example, someone demonstrates what she means by free-will by doing something for no reason whatsoever *except* as a demonstration of free-will – dropping a pen on the floor, for example. But such examples are exceptional.[200] The vast majority of things we say and do are *not* spontaneous in this way. We say and do what we do in the light of what we take to be relevant to our concerns and interests given our antecedent circumstances: we answer people's questions, or, more generally, we make pragmatic ties. Even when what we say or do is not *obviously* a response to anything – it is not obviously a pragmatic tie – a moment's reflection will usually show that there *are* antecedent conditions in our not immediate past to which it is causally related. Even supposing that Kant's proof of the thesis of the Third Antinomy is sound it is hard to discern any relevance that it might have to human life.[201] As I have suggested (at the beginning of chapter six), Kant's earlier idea of inferring the freedom of the will from the spontaneity of the understanding is, I think, a more fruitful line of enquiry..

Kant presents his resolution of the Third Antinomy in both the Critique and the Prolegomena, but it is the latter presentation which, though shorter, is the more thoroughly worked out. The two presentations supplement each other. Speaking of the contradiction between the thesis and the antithesis of his Third Antinomy Kant states in the Prolegomena that,

> "…if natural necessity is referred merely to appearances, and freedom merely to things in themselves, no contradiction arises, if one assumes or admits at the same time both kinds of causality," [53, paragraph 3]

Kant immediately adds, "however difficult or impossible it may be to make the latter kind of causality conceivable". A difficulty in the way of understanding the above passage is that it refers to things in themselves

[200] And even with this example, the student was doing something (dropping a pen on the floor) to make a point.

[201] Paul Guyer notes that because "a *single* act of uncaused causation outside of the temporal series" would suffice to make Kant's thesis true the latter "*might* be true without that being of any help to the cause of *human* freedom." Guyer, (2006) op. cit. p. 142. Nonetheless, Kant *intended* his thesis to address the issue of free will. Sadik J. Al-Azm has argued that Kant's thesis and proof "is really a restatement in Kantian language of the position expounded by [Samuel] Clarke in opposing Leibniz's thoroughly deterministic standpoint…". See Al-Azm, S. The Origins of Kant's Arguments in the Antinomies (Oxford: Clarendon Press, 1972) p. 94.

without qualification whereas if we are to make sense of the words, "the causality of freedom", these words cannot be understood as applying to the things in themselves that appear to *us* as, for example, cups and saucers, billiard balls and clouds; for it would be absurd to attribute a causality of freedom to the things in themselves that supposedly ‚correspond' to such things as the latter. In the Critique Kant begins his resolution of the Third Antinomy with a statement that is more specific than the passage I have quoted precisely in that it delimits the scope of the supposed causality of freedom just to those things in themselves the causality of whose appearances we may call ‚intelligible':

> "If… appearances are not taken for more than they actually are; if they are viewed not as things in themselves, but merely as representations, connected according to empirical laws, they must themselves have grounds which are not appearances. The effects of such an intelligible cause appear, and accordingly can be determined through other appearances, but its causality is not so determined." [B565]

This is Kant's first reference to an intelligible cause in the context of the Third Antinomy. A paragraph later Kant explains what he means:

> "Whatever in an object of the senses is not itself appearance, I entitle *intelligible*. If, therefore, that which in the sensible world must be regarded as appearance has in itself a faculty which is not an object of sensible intuition, but through which it can be the cause of appearances, the *causality* of this being can be regarded from two points of view. Regarded as the causality of a thing in itself, it is *intelligible* in its *action*; regarded as the causality of an appearance in the world of sense, it is *sensible* in its *effects*." [B566]

Kant regards the intelligible cause of a being's behaviour as a causality of freedom because it stands outside the causal chain of necessity that, he assumes, pertains to this same behaviour when regarded as an object of empirical study – as, for example, by an anthropologist [B578]. It stands outside the supposed absolute determinism of nature because, since it pertains to something in itself, such concepts as ‚before', ‚after', ‚during', and ‚now' have no application to it, notwithstanding that its *effects* are in time.

In its empirical character, a subject – Kant is obviously thinking of a human being – is always part of the supposedly absolute causal determinism

that Kant takes as defining ‚nature'.[202] But in "its intelligible character (though we can only have a general concept of that character) this same subject must be considered to be free from all influence of sensibility and from all determination through appearances. Inasmuch as it is *noumenon*, nothing *happens* in it;" [B569] and so, in virtue of the intelligible character of the causality behind the actions of this subject the latter's actions are the effects of a causality of freedom. In developing this thought Kant goes on to suggest and to accept as possible that the connections of supposed causal necessity amongst a person's actions in their empirical character are the *effects* of the *intelligible* cause of the person's actions [B572].

To facilitate the examination of Kant's highly abstract thought I will provide a model of what Kant has been describing. Consider a computer programmed to play some game – chess, for example. This is a model for what Kant is proposing because what Kant *assumes* to be true of our own actions, namely 1) their complete causal necessitation by antecedent conditions in accordance with the laws of nature, and 2) their causal dependence, notwithstanding the latter, on that which is intelligible, really is true of the computer's chess-playing. Also, the chess-playing computer models Kant's suggestion that in the case of our own actions, the *empirical* causal connections referred to under 1) are causally dependent on the *intelligible* causality of 2). For the former correspond in the model to the *moves* that the computer makes in different board positions, which moves are what they are because (causally because) of the computer's *program*, which program is what it is largely because (causally because) of *the understanding of how to play chess well* that was drawn upon by whoever wrote the program. The chess-playing computer is not only a model that illustrates Kant's proposal as to how the thesis and the antithesis of his Third Antinomy can be reconciled. It is also a counter-example to his proposal. For although it may be granted that the computer's programme is informed by an understanding of chess the computer in its actual play has no understanding at all, whether of chess or of anything else.

[202] Kant's conception of nature (at least in the first Critique) is all that Wordsworth repudiates in *his* conception of nature.

Kant goes on to explicate the intelligible causality that he has identified as pertaining to our actions when we view ourselves as noumena. He rightly points out [B575-6] that whereas the concept of ‚ought' has no meaning whatsoever when applied to nature – to say that an earthquake ought not to have happened would be absurd – in the case of our own actions the concept is *necessarily* applicable. Of anything we do it always makes sense to ask whether we ought or ought not to have done whatever it was that we did or did not do.[203] Now the same is true of the moves of the chess-playing computer. For, except in the case of forced moves, in any given chess position there are moves that ought not to be made – they are bad moves – and sometimes there are moves that ought to be made – best, or even merely good play requires them. That the ‚oughts' here are not moral oughts adds to the merit of the chess-playing computer as a model of Kant's proposal for reconciling the thesis and the antithesis of his Third Antinomy; for there is no reason at all why Kant's proposal should be applicable only when there are moral oughts involved.

What Kant has to say in the Critique goes less far than what he has to say in the Prolegomena towards explaining the crucial role of the concept of ‚ought' in his resolution of the Third Antinomy. The following important paragraph is the seventh from § 53 of the Prolegomena.

> "I can now say without contradiction: all acts of rational beings, in that they are appearances (are encountered in some experience), stand under natural necessity; the same acts however, merely with respect to the rational subject and to its faculty of acting to mere reason, are free. For what is demanded for natural necessity? Nothing further than the determinability of every event in the world of senses according to constant laws and a reference to a cause in appearance, while the thing in itself that lies at the ground and its causality remain unknown. But I say: *the law of nature stands*, whether the rational being is the cause, by reason and through freedom, of effects in the world of the senses, or whether it does not determine these effects out of grounds of reason. For in the first case the act happens according to maxims the effect of which in appearance will always be in conformity with constant laws; in the second case, the act happening not according to the principles of reason, it is subject to the empirical laws of sensibility,…"

Kant's introduction of the word "maxims" in the above passage shows that he is taking it for granted that what constitutes the *rightness* of an action, whether

[203] Of course, of many inconsequential actions, such as tapping my fingers on the desk, it might be a bit silly to say I ought to do it or I ought not to do it, but it at least *makes sense* to speak in such a way.

this be its moral rightness or its being rightly suited to a given end, could always be completely spelt out in words – namely, the words of the maxim which the action exemplifies. The chess playing computer is a perfect model of this. For suppose that the computer has generated a move during a game and that it is a good move. Then we may speak of this move as being in accord with the maxim that in the position in question – this being precisely and unambiguously specified – certain specific moves should not be made, and perhaps that a certain specific move should be made.[204] Such a maxim is to the contained world of chess what the maxims spoken of by Kant in the passage just quoted are supposed to be to our actions in the world at large.

Kant's attempt to reconcile the Third Antinomy's thesis with its antithesis rests on two main ideas. The first is that there is no reason to think that the *intelligible* causality manifested in the (supposed) maxims which specify what we ought or ought not to do – whether morally or otherwise – is incompatible with the *empirical* causality manifested in the (supposed) causal necessitation of everything that we do or do not do, because we may reasonably think of the maxims as in a sense *determining* – causally determining – the causal necessitation of our actions. For the maxims specify what regularities our bodily movements have to evince if they are to be accounted ‚right' or ‚rationally based' actions. This idea is modelled by our chess-playing computer. Kant's other main idea is that if the above idea is sound (and I am maintaining that it is) then the thesis and the antithesis of his Third Antinomy are logically compatible provided that the causality of freedom pertains only to intelligible causality, whereas the causality of nature – or, as I would prefer to call it, the causality of necessitation – pertains only to empirical causality.

What Kant has envisaged presupposes, as in the chess-playing computer model, that corresponding to our every action there is a maxim covering it, adherence to which ensures that the action is right – morally or

[204] That much more often than not the chess playing maxim would simply rule out certain moves as bad, leaving the player free to choose between a selection of alternative equally good moves in no way detracts from the status of the chess-playing computer as a model for Kant's proposed resolution of his Third Antinomy. Indeed, this just makes it a better model than it would otherwise be, for in everyday life it is true more often than not that many possible actions are ruled out as bad whilst many other possible actions remain as equally good.

otherwise. Indeed, the word "right" here may best be understood, I suggest, as comprising whatever it is that ensures that those of our bodily movements which we account as actions *are* actions – that they make some sort of sense, that they can be *evaluated* on all kinds of grounds in regard to whether, or to what extent, they subserve our purposes, interests, ideals, etc. After all, ill-considered or foolish actions and morally wrong actions are still actions and we are presumably as free to perform them as we are to perform sensible and morally right actions: Kant cannot really mean what his actual words sometimes suggest – that we are only free when our actions accord with maxims which specify how to behave sensibly and rightly. So is it credible that whatever it is that ensures that (most of) our bodily movements constitute actions could be specified in maxims? Merely to ask the question is enough, I think, to raise serious doubts. For to speak of an action is to imply that the person performing the action might adapt what she is doing, stop doing it, or do additional relevant things depending on what might crop up in the next few seconds or minutes. And as explained in chapter six, there would to all appearances be any of *limitlessly* many possible ways in which she could modify or appropriately add to or subtract from her bodily movements and *limitlessly* many possible future contingencies to any of which she could respond by appropriately modifying, adding to or subtracting from the bodily movements constitutive of what she is doing. The idea that all this could be spelt out in the form of maxims is, to say the least, doubtful.

What follows is a thumbnail sketch of a possible alternative to Kant's proposed resolution of the Third Antinomy. The basic ideas involved have already been introduced in earlier chapters and in chapter eight it will be argued that what is here merely entertained as a possibility is indeed the case. Ironically, the alternative to be entertained is more in keeping with that which is absolutely fundamental to Kant's first Critique than is Kant's own proposed resolution to the Third Antinomy.

Contemporary concepts are not well suited to do justice to the *unspecifiable* character of the behavioural dispositions from which our actions issue, so there can be no question here of any logical proof. Given the concepts we currently have available, the issue goes deeper than any logical

proof that could be formulated.[205] As already suggested, a radical change in our conceptions of causality and of ‚reason' is called for, a change away from the idea – so much taken for granted by Kant – that causality is necessarily rule-governed succession and that reason or rationality is a matter of behaving in accordance with rules or maxims. Rather, the unspecifiable character that – to all appearances – pertains to the behavioural dispositions that are constitutive of *understanding* and from which our actions issue should, I suggest, be seen as something ultimate. It should be seen as that without which there could be no such thing as *following* a rule. The chess-playing computer *follows* no rules because it has no understanding. Its chess-playing evinces no causality of freedom because its every move is predetermined by antecedent *conditions*. Although it is true that this predetermination is itself determined by the intelligible causality – as Kant calls it – involved in playing chess, its every move is nonetheless predetermined. By contrast, even a beginner at chess evinces a causality of freedom in her play in the sense that, in accordance with my general suggestion, the move she makes is not predetermined because it issues from the antecedent unspecifiable state that characterises her behavioural disposition – regarding not only the game itself but the circumstances under which it is being played – whilst sitting there thinking about her move.

There is a certain irony in all this. If, as I am suggesting, the reason why our actions are not predetermined is because of the unspecifiable character of the behavioural dispositions from which they issue then there is some point in saying that the kind of causality involved here pertains to us as we are in ourselves and not to any experiencable *manifestation* of ourselves; for since the behavioural dispositions in question could not, I am supposing, be comprehensively described other than in very vague and general terms,

[205] If this is true, i.e. if what is here being put forward as a serious possibility is in fact the case, then it would explain why there is still radical disagreement amongst Kantian scholars and philosophers as to whether "freedom must be contracausal, to use Allison's term, and that its efficacy must be nonnatural." The quoted passage is from Meerbote, R. "Which Freedom?" in Cicovacki, ed., Kant's Legacy p. 220. There is also, as Ralph Meerbote notes, profound disagreement as to where Kant stands on this issue. See in particular Wood, A.W. "Kant's Compatibilism" in Self and Nature in Kant's Philosophy, ed. Wood, A.W. (1984) pp. 73-101; Beck, L.W. "Five Concepts of Freedom in Kant", in Stephan Körner – Philosophical Analysis and Reconstruction, Srzednicki, J.T.J., ed. (1987) pp. 35-51; Allison, H. Kant's Theory of Freedom (1990) and Allison (1996) op. cit.; and Davidson, "Mental Events", op. cit.

they could scarcely be said to be knowable. The irony is that the resolution of Kant's Third Antinomy being suggested here is more in keeping with Kant's distinction between things in themselves and things as they appear to us than is his own attempted resolution. For although Kant holds that things in themselves are unknowable he also, as has been discussed, holds (inconsistently with the foregoing) that the reason or rationality that he takes to constitute what we are in ourselves could be spelt out in maxims and hence *could* thus far be known.

If what has been suggested is correct then neither the thesis, nor the antithesis, nor what Kant really understands by the thesis (which is merely its logical contrary and not its contradictory) of his Third Antinomy is true. But what is being suggested is more *like* what he understands by the thesis. To *state* the truth both accurately and succinctly is difficult. I have already tried to sketch it, to indicate it, in developing the chess-playing computer example. To sum up, a radically changed fundamental conception of causality is needed. What is needed is a conception of a causality that is not just rule-governed succession and that is integral to what it is to behave reasonably, sensibly or intelligently in the widest sense of these words.[206] Kant's causality of freedom, understood as integral to what he calls intelligible causality, may be seen as a step towards the change that is required. But Kant is committed to the idea that causality necessarily involves rule-governed succession – he is Hume's loyal follower in this regard. Once we begin, though, to take the idea of *intelligible* causality seriously this commitment can be seen, I think, to be needless: if, for example, I say something to try to put a visitor at ease then it is quite certain that my utterance is *causally* connected with various things because it is *intelligibly* connected with these same things, and recalling the arguments of the last chapter, there is, I am maintaining, no rational basis for maintaining that the causality spoken of is *necessarily* a case of rule-governed succession. We should put our trust in appearances here and not enforce our preconceived – and I believe misconceived – notions on them. Our cognitive dispositions

[206] In short, just what it is to behave in the world. It may very well be the case that all that can be done is to intimate at it or indicate it: it cannot be spelt out in complete and precise detail.

appear to be unspecifiable.[207] Before *questioning* this let us explore the possibility that they *are*. This has been a recurring thought.

One might perhaps wonder why the possibility that has here been envisaged was not taken note of by Kant. Of considerable relevance here is that Newtonian mechanics, and hence the absolute determinism – or better, predeterminism – that it entails, was regarded by nearly everyone among the educated as altogether beyond criticism.[208] Even among subsequent philosophers, few before the rise of quantum theory and relativity have been so bold as seriously to raise the question of whether Newtonian mechanics might, for all its successes, not be the truth and nothing but the truth.[209]

A final word is called for about Kant's assumption that the third antinomy only has relevance to human beings. Kant explicitly states that, "In lifeless, or merely animal, nature we find no ground for thinking that any faculty is conditioned otherwise than in a merely sensible manner." [B574] In other words, we have no reason to think that there is anything in nature other than ourselves whose movements or behaviour is not in every respect predetermined in accordance with laws of nature. It follows that, for Kant, dogs and chimpanzees are in this regard no different from billiard balls. With the benefit of hindsight gained from studies of evolution and of animal behaviour, this sharp separation between human beings and the rest of nature is unacceptable. This is not to deny the existence of a gulf that separates us mentally from animals, but the operative word here is "mentally": the gulf is between two kinds or levels of mentality and not between no mentality and mentality. Any thoroughgoing investigation into the issue of free-will and determinism has to do justice to this fact.

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[207] Certainly, nobody has as yet specified them – that is, described them completely and unambiguously – and I do not see how it could be done.

[208] Berkeley is an exception. He deserves credit not only for his criticisms of the infinitesimal calculus as a model of reality but for respecting Newton's achievement without accepting it unquestioningly. See Warnock, G.J. Berkeley (1953) pp. 207-222.

[209] C.S Peirce is among the few. He held that Newtonian mechanics was an approximation only. See his "The Doctrine of Necessity Examined" in his Monist papers. Republished in Wiener, P.P. ed. Charles S. Peirce: Selected Writings (Values in a Universe of Chance) (1958) pp. 160-179.

Chapter Eight

Analogues of Kant's Third Antinomy

This final chapter is the culmination and conclusion of the thesis. The central claim of the thesis, that the syntheses that are constitutive of understanding are unspecifiable in character – that they cannot be completely and unambiguously defined – and thus that the causal connections through which these syntheses are effected could not be instantiations of rule-governed succession, is here argued for. A proof one way or the other is not to be expected. Whether or not one agrees with my argument is, rather, a matter of judgment, and in making such a judgment a great deal needs to be taken into account. The arguments of the previous chapters may be regarded as contributing to the stock of relevant considerations that need to be borne in mind in making a judgment on this issue.

The chapter begins (in parts one and two) with counter-arguments to my thesis.

1) Criticism of an *A Priori* Argument for an Analogue of the Third Antinomy's Antithesis

I shall begin by offering the best argument I can for the *a priori* truth of an analogue of Kant's antithesis. It may be set out as follows.

Premise:	The „same cause/same effect' thesis is analytically true.
Inference 1:	The same cause/same effect thesis entails that the „cause/law' thesis is analytically true
Inference 2:	The „cause/law' thesis entails that it is analytically true that causes necessitate their effects.
Stipulative definition:	It is analytically true that insofar as any event is uncaused it is thus far a purely random occurrence.
Inference 3:	(From inference 2 and the stipulative definition) The following antithesis analogue is an *a priori* truth: either every event is causally necessitated or insofar as it is not causally necessitated it is thus far a purely random occurrence.

The initial premise does not assert *that* there are regularities amongst the events that comprise nature let alone that every event in nature is in every

respect an instantiation of a regularity. It asserts only that *if* exactly the same cause were to occur again then exactly the same effect would recur. It asserts that this conditional is an analytic truth. The following consideration provides some support for this premise. Suppose that we know without a shadow of a doubt that an event falling under a description e was caused by the occurrence of conditions falling under a description c, and that conditions now occur that have every appearance of falling under the description c but no event falling under the description e ensues. Then we would not conclude that on this occasion the occurrence of conditions falling under the description c did not cause an event falling under description e. Instead, we would conclude that the conditions which had every appearance of falling under the description c did not really fall under it: we would conclude that there was something about these conditions that made them different from c, and we might then proceed to try to find out what the difference was.[210] In all this we would be showing our tacit acceptance of the same cause/same effect thesis at least as a methodological principle and perhaps also as an analytic truth: our understanding of causality being such that we would refuse to *count* anything as an exception to the same cause/same effect thesis. But against this consideration there is the fact that according to standard interpretations of quantum mechanics there is such a thing as *probabilistic* causation, according to which two nuclei of a radioactive element, for example, would each be in exactly the same quantum mechanical state yet undergo radioactive decay at different times. This strongly suggests that the same cause/same effect thesis is not analytic.

Let us turn to inference 1. We owe the name of the cause/law thesis to Donald Davidson.[211] The thesis may be stated as follows. Given any causal connection then from amongst the indefinitely many possible acceptable ways of describing it there is a description c of the conditions that constitute the cause and a description e of the event that constitutes the effect such that there is a true law-like statement of the form ‚if conditions are c then an event e will occur'. The import of this is illustrated by the example of a man falling over

[210] Medical research abounds in such instances and in fact medical progress depends upon such instances being investigated: why did a certain drug work for one woman with a particular form of cancer and not for another – what were the relevant differences?
[211] D. Davidson, "Laws and Cause", in Truth, Language and History pp. 201-205.

because he stepped on a piece of orange peel. His stepping on the peel caused him to fall over. The incident may be described in any of a myriad of ways: that the man stepped on the rind of a citrus fruit and ceased to proceed in a dignified manner; that what the small boy had left on the footpath caused the man who stepped on it to undergo a change in direction; that the fact that the heel of the man's shoe met much less resistance from the pavement than at his previous stride caused him to slip and, despite his best efforts to keep his balance, fall to the ground etc. But there is no true law-like statement covering the causal connection here that could be framed in such everyday terms. Any law-like statement framed in everyday terms would have innumerable exceptions to it. But this does not mean that the cause/law thesis is false because there might be *other* kinds of descriptions of the unfortunate incident in terms of which a true law-like statement covering the causal connection involved *could* be framed. And we know very well that there *is* a true law-like statement covering the causal connection framed in terms of the relevant scientific concepts, namely, the concepts of Newtonian mechanics. We know that this law-like statement covers the case comprehensively and in tremendous detail. *The cause/law thesis is to be understood as implying that the same kind of thing applies universally*. Every causal connection can be described in many different ways but the vast majority of these descriptions are quite unsuitable for framing the law-like statement covering the causal connection; *that* requires the appropriate scientific concepts.

Such, essentially, is Davidson's account of the cause/law thesis. It may be regarded as a more sophisticated version of Kant's thesis that causality is rule-governed succession. It is, I would say, the orthodox view of causality. There is of course much more that could be said about it but the foregoing is sufficient for the purposes of my argument.

According to inference 1, the same cause/same effect thesis implies the cause/law thesis. The following reasoning might be offered in its support. If we have identified the cause of some event, then, given the same cause/same effect thesis, we may (it might be thought) infer that whenever exactly this *kind* of cause recurs an event of exactly the same *kind* will ensue, which inference may, in accordance with the cause/law thesis, be expressed in terms of a law-like statement of the form „If conditions are c then an event e will

ensue'. I will argue a little later that it is precisely here that the *a priori* argument for the antithesis analogue is flawed.

Inference 2 is that the cause/law thesis implies that causes necessitate their effects. The inference is a reasonable one. For consider the following reasoning. On the supposition that the cause/law thesis is correct, if certain conditions, c, antecedent to an event, e,[212] are the cause of e then there is a law-like statement, s, to the effect that „if c then e' – it being understood that the descriptions of c and e in s may be, and almost certainly are, quite different from our everyday descriptions of them. Therefore, from s and from a statement that c obtains we may deduce that e will occur: the statement that e will occur follows of logical necessity. Thus far the reasoning is rigorous. The rest of the reasoning is not because it has to do only with what we are *inclined to say*. This, though, is in no way to belittle its importance. The matter may be approached through a question: since the statement that e will occur follows of *logical* necessity from s and the statement that c obtains, may we not say that e's occurrence is a necessary result of c's obtaining? I cannot see why not. The idea of being able logically to infer the occurrence of an event as outlined above is of great philosophical importance and it is useful to be able to mark it in our speech succinctly. I suggest that to speak of such a logically inferable event as being the necessary result of the antecedent conditions described by the statement from which, together with the relevant law-like statement, a statement that the event will occur is logically deducible gets the idea across without much risk of being misleading.[213]

What about the stipulative definition? Is it reasonable to maintain that it is an analytic truth that insofar as any event does *not* instantiate any causal connection it is thus far a purely random occurrence? The answer defended here is yes, although the point is so basic that it is scarcely amenable to any reasoning. Instead, let us consider a couple of examples. The decay of the nucleus of an atom of a radioactive element, such as radium or uranium, is an event that – according to standard interpretations of quantum theory – is not in

[212] Here, the question of whether c has to be immediately antecedent to e or spatially contiguous with e is prescinded from.
[213] This is simply a recommendation about our application of the phrase „necessary result of antecedent conditions'. It has no bearing on Saul Kripke's claim that there are metaphysically necessary connections in nature. See S. Kripke, Naming and Necessity (1980).

every respect caused. In particular, the exact time at which the decay occurs is not the result of any antecedent event's occurring. Only the probability of the decay of the radioactive nucleus is subject to causation. The only law-like statement linking the state of the radioactive nucleus before decay with its state after decay is a statement of a numerical probability.[214] Insofar, then, as the event is *un*caused it is a purely random occurrence.

The phrase "a purely random occurrence" is to be understood as also being applicable to events or aspects of events that do not instantiate any numerically statable probabilities, as the following example from *Cinderella* illustrates. The fairy godmother waves her magic wand and turns the pumpkin, rat and mice into a coach, coachman and horses. Thus far the change exemplifies a sort of causality. But what colour is the coach? How big is it? Does it have elaborately carved wood-work? What does the coachman look like? How docile or spirited are the horses? We might, I suppose, think that the fairy godmother mentally determined beforehand completely and exactly how everything would be. But we need not suppose this. We might just as well suppose that she mentally determined only that there would be a *beautiful* coach and horses with a *handsome* coachman, in which case the fairy godmother's transmogrification of the pumpkin, rat and mice would be a causal connection the details of which would be a matter of pure chance, albeit constrained by aesthetic standards; and if the fairy godmother similarly transmogrifies other pumpkins, rats and mice to help other mistreated young women we may suppose not only that no two transmogrifications are the same but that the variations from case to case instantiate no numerically specifiable probabilities.

The phrase "a purely random occurrence" is thus to be understood in a generous sense. It covers both what we might describe as "chaotic" – the creation and destruction of virtual particles in a vacuum perhaps – and much that we would not call chaotic. Indeed, the phrase may be regarded as meaning no more and no less than „uncaused', the above examples simply indicating the kinds of things that would *count* as uncaused.

[214] This determines the half-life of the element concerned.

Of the *a priori* argument for the antithesis analogue there remains only inference 3, namely, given that it is analytically true that causes necessitate their effects (inference 2), and given that insofar as any event is *uncaused* it is a purely random occurrence (the stipulative definition) then it logically follows that the antithesis analogue is true, i.e. that either every event is causally necessitated or insofar as any event is *not* causally necessitated it is to just that extent a purely random occurrence. I take it that this inference is valid: if its two premises – marked by the two "givens" – are true then the conclusion logically follows and the antithesis analogue is true.

Before criticising this *a priori* argument a word is called for about the antithesis analogue itself. This obviously encompasses the idea of a completely deterministic universe, the clockwork universe of Newtonian mechanics, for the latter is a world of nothing but causal necessity and the antithesis analogue explicitly allows for this. It also encompasses the idea – associated with quantum physics – that there are events whose causal dependence on antecedent conditions is specifiable only probabilistically. But it is of interest to note that the antithesis analogue also encompasses the idea of a very different kind of world from either of the above. It encompasses the idea of a world that comprises nothing but different kinds of substances and their ‚chemical' interactions but where there is no underlying set of laws that would enable these chemical reactions to be explained and in principle predicted – as the chemistry in the real world is underpinned by the laws of quantum theory. The idea is that for each different kind of chemical reaction that can occur there is a true law-like statement that fully describes the transformation of the reactants into products.[215] These law-like statements, then, are tantamount to ultimate laws of nature in this imaginary world.[216] Furthermore, new such laws of nature are continually being inaugurated (so to speak) for there is no limit to the number of different chemical reactions that can occur because the products of earlier reactions may serve as reactants in new reactions without limit. The scenario thus allows for a genuine *novelty* or

[215] The play of pure chance can also be allowed for in this imaginary world. It might, for example be evinced as random variations in the rates at which the chemical reactions occur.
[216] In the real world the equivalent law-like statements are (it is generally assumed) derivable – in principle – from the laws of quantum theory and from statements of the relevant initial conditions regarding the reactants referred to by the law-like statement.

creativeness, namely, the occurrence of new „chemical' reactions whose covering law-like statements are tantamount to new laws of nature.[217] The antithesis analogue should therefore not be *identified* with the idea that the world is either a piece of clockwork or a piece of clockwork mixed with probabilities – although it does *encompass* both these ideas.

Even if the initial premise of the argument is accepted, i.e. even if – contrary to standard interpretations of quantum mechanics – it is accepted that the same cause/same effect thesis is analytically true, the argument would still fail. It would fail because inference 1 is mistaken. The inference in question is that the same cause/same effect thesis entails that the cause/law thesis is analytically true. The reason that there is no such entailment is that the inference rests on a presupposition whose truth cannot be known *a priori*. The presupposition can be stated in the following alternative ways, all of which come to essentially the same thing: that every causal connection is fully *deterministic* in character; that every causal connection is of a *well-defined* character; that for every causal connection it would be possible in principle to describe both the cause and the effect completely, precisely and unambiguously; or that for every causal connection it would be possible in principle to re-identify *exactly the same kind* of causal connection on other occasions. Thus far the antithesis analogue has been discussed without special reference to ourselves and our actions. But what we want to know first and foremost is whether what the antithesis analogue asserts is true of our own actions. So the question is whether we can know *a priori* that the causality involved in human actions is of a well-defined character. Can we know *a priori* that the causality involved, whatever else may be said of it, could in principle be specified in full and explicit detail? Simply to ask the question is enough to see that we *cannot* know this *a priori*.[218] Throughout this thesis we

[217] The imaginary world of chemistry without an underpinning of physical laws clearly illustrates one conception of „emergence'. The law-like statements covering chemical reactions that have never hitherto occurred are tantamount to emergent laws of nature which describe emergent phenomena, i.e. the manifestation of properties that cannot be explained or understood in terms of the conditions that give rise to them. See A. Beckermann, Hans Flohr, and Jaegwon Kim, eds. Emergence or Reduction? Essays on the Prospects of Nonreductive Physicalism (1992)

[218] The reason that this has seldom been noticed is presumably because the question has seldom been asked. It would seem that as soon as human beings begin to think about abstract matters they naturally take it for granted that *what* is thought about is, whatever else it is,

have come up against the fact – as I take it to be – that causality in the realm of human experience and behaviour has every appearance of being of a character that cannot be specified in full and in detail. Let us recall the discussions of the impositional causality involved in recognising that a change has occurred or in our understanding things. These examples show, I believe, that we cannot know *a priori* that all causality is of a fully specifiable kind.

2) Can an Analogue of the Third Antinomy's Antithesis be Affirmed on Empirical Grounds?

It will be helpful in what follows to make use of the concept, introduced in chapter five, of a ‚pragmatic tie', i.e. of a causal connection being made between what one person says and what another person then says where the making of the second remark makes sense in relation to the first person's having said what she did.[219] Suppose that somebody, A, says something to which somebody else, B, makes a pragmatic tie. In every such case, either 1) it *would* (this is an antithesis analogue) or else 2) it would *not* (this is a thesis analogue) have been possible in principle, at any time throughout the period from when A had finished speaking to when B had begun to speak, to have deduced from a statement of the relevant laws of nature and of the initial conditions relevant to the case that certain muscles of B's body – of her lips, vocal chords, etc. – would make the sequences of movements that they did in fact make in B's effecting her pragmatic tie and the movements would occur when in fact they did.

There is a proviso. It is only a minor qualification but it involves some complication. The antithesis analogue is to be understood as allowing for the possibility that the statements deducible concerning B's bodily movements might not describe them or their timing with complete exactitude. The antithesis analogue is not to be rejected if there are discrepancies between what is deducible and what actually happens that are so slight as to be

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something determinate. In mathematics this is legitimate, and indeed absolutely essential. But, as I have said, a moment's reflection – the mere asking of the above question – is enough to show that we cannot know *a priori* that „all that is' is deterministic; in particular, we cannot know that the causality involved in our own actions is deterministic.

[219] R. Green, op. cit.

undetectable except on scales where quantum mechanics is applicable, and so long as any such discrepancies are attributable solely to chance, e.g. to the fact that the production of the bodily movements in question is subject to Heisenberg's Principle of Indeterminacy, often called the Uncertainty Principle. Correspondingly, the thesis analogue is to be understood as ruling out not only any possibility of deducing *exactly* what B's bodily movements will be at the quantum mechanical level but also any possibility of deducing what they will be at the physiological level of bodily movements and muscle contractions.

The analogues presented here of the Third Antinomy's antithesis and thesis are logical contradictories: they cannot both be true and (unless they share a false presupposition) one of them must be true.[220] There may be a temptation to say that the thesis analogue implies that human understanding involves the existence of Kant's "causality of freedom". But to say this might be regarded as misleading by those philosophers who hold that free-will is or might be compatible with determinism.[221] For according to compatibilism the above *antithesis* analogue would be deemed to be compatible with B's having exercised or evinced free-will in saying exactly what she did. That every detail concerning the bodily movements made by B that are constitutive of what she said in response to A's remark could have been deduced well beforehand from the premises spoken of in defining the antithesis analogue would in no way – according to this philosophical view – either render her bodily movements puppet-like or undermine her status as a free agent. So, rather than saying that the thesis analogue differs from the antithesis analogue in its acceptance of a causality of freedom it would be better to say that what sets the thesis analogue apart is its acceptance that the causal connections involved in generating the bodily movements constitutive of our manifesting an

[220] To avoid misunderstanding, the following needs to be emphasized: the thesis and the anti-thesis analogue are so *defined* as to be logical contradictories: one of them must be true and the other false. Either our bodily movements that manifest understanding are in principle deducible on the basis of natural laws (the anti-thesis) or else they are not (the thesis).
[221] See, for example, D. Dennett, "On Giving Libertarians What They Say They Want" in Brainstorms (1978) pp. 286-99; B. Berofsky, "Ultimate Responsibility in a Determined World" in Philosophy and Phenomenological Research 60, 2000, pp. 135-40; P. Russell, "Causation, Compulsion and Compatibilism" in American Philosophical Quarterly 25, 1988, pp. 313-21.

understanding of something – anything – cannot be reduced to any kind of rule-governed succession.

The question now to be addressed is whether the above analogue of the third antinomy's antithesis can be affirmed on empirical grounds, specifically, on the basis of what is known about the phenomena to which quantum mechanics is applicable.[222] In part three, an argument of an *a priori* character is given for the thesis analogue. Clearly if this is correct then there could be no *a priori* proof of the antithesis analogue. This does not render the argument of part one redundant, although it does mean that the latter's chief importance resides in its helping to bring out what the antithesis analogue involves. The position arrived at is thus closer to that which Kant maintained in his pre-critical writings[223] than to that which he defends in the Critique.

Like Kant both in his pre-critical writings and in the Critique the argument offered here for the analogue of the Third Antinomy's thesis owes nothing to any ethical considerations.

The success of quantum mechanics has been so great that, it might be argued, we may be reasonably sure that for *every* physical change there was an antecedent probability of its occurring when and where it did given the antecedent conditions prevailing, the numerical value of this probability being completely determined by the laws of quantum mechanics with absolute precision. The bodily movements made by person B in replying to A's remark are all physical changes so quantum mechanics should apply to them just as it applies to changes in the rest of the physical world. It is known that each of B's bodily movements would have been caused by antecedent physical changes in her body, which changes would in turn have been caused by other bodily changes, especially in her brain, and so on. Given all this, it might then be concluded, we may be reasonably sure that the antithesis analogue is true.

This is a strong argument. But for the following reason it is not conclusive. It is true that the success of quantum mechanics has been very great and free from any setbacks in every context to which it has thus far been

[222] The very idea of there being empirical support for the anti-thesis analogue is of course out of keeping with the spirit of Kant's philosophy.
[223] Allison (1996), op. cit. p. 92 & p.199; and Ameriks, op. cit. pp. 194-6.

applied.[224] No context has yet been discovered to which the application of quantum mechanics would not allow physicists – if given enough time and resources etc. – to calculate the precise numerical probability of every possible event that could ensue from that context. But nobody knows whether this success will continue if and when quantum mechanics is rigorously applied to the bio-molecular changes in the brain, especially the quantised changes in shape of protein molecules that determine the flow of ions from one side of the cell membrane to the other,[225] on which the bodily movements of those of our actions which evince understanding causally depend. The application of quantum mechanics to *this* realm of phenomena has scarcely begun.[226] The possibility should therefore be kept in mind that conditions at the atomic and molecular levels in the living brain are (often) such that if quantum mechanics were to be applied to these conditions the probabilities of the ensuing bio-physical events (e.g. the quantised change in shape of a protein molecule) would be quantum mechanically calculable not with absolute precision but only within certain limits.[227]

How much weight should be placed on this consideration is a matter of empirical judgment. The criticisms that have been given in earlier chapters of some of Kant's theses and arguments concerning understanding imply – if they are correct – that understanding is something that is extraordinarily difficult to understand and this might well be taken to suggest that there is something extraordinary about the physical basis – in the brain – of

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[224] See R. Penrose, The Road to Reality: A Complete Guide to the Physical Universe (2004) p. 782.

[225] See E. Kandel, and R. Hawkins, „The Biological Basis of Learning and Individuality' in *Scientific American* Sept. 1992, pp. 55-57.

[226] See, however, J. Eccles, How the Self Controls Its Brain (1994)

[227] There have been a number of speculative attempts to apply quantum mechanics in the endeavour to understand the physical basis of consciousness and free will. John Eccles, for example, has hypothesised that the self can alter the probabilities of certain events in the brain occurring. He argues that the physical quantities involved – energy, time and distance – are small enough for quantum mechanics to be relevant. See J.Eccles, op. cit. Henry Stapp has hypothesised that an intention can be likened to a *measurement* of a quantum mechanical state. See H. Stapp, "Attention, Intention and Will in Quantum Physics" in B. Libet, A. Freeman, and K. Sutherland, eds. The Volitional Brain: Towards a Neuroscience of Free Will (1999) pp. 143-164. Among many other proposals regarding quantum mechanics and the brain are those set out in R. Penrose, R., The Large, the Small and the Human Mind (1997); and R.C. Bishop, "Chaos, Indeterminism and Free Will" in R. Kane, ed. The Oxford Handbook of Free Will (2002) pp. 111-124. But I have not found in any of these works (and many others besides) any recognition of the possibility envisaged here in section 2. It is not at all evident, therefore, that these works are relevant to the issue addressed here.

understanding. Finally, it should be remarked that there is and has been from the beginning wide disagreement as to how quantum mechanics should be interpreted.[228] Perhaps there is an interpretation of quantum mechanics thus far overlooked according to which the possibility envisaged above would seem a matter of course. As things stand, taking the various knowns and unknowns into account, epistemic caution is called for. The above analogue of the Third Antinomy's antithesis cannot therefore be affirmed with confidence on empirical grounds.

3) An *A Priori* Argument (or Consideration) for an Analogue of the Third Antinomy's Thesis

A) Manifestations of Understanding

The term "pragmatic tie" was introduced in chapter five to provide a convenient means of referring to the „connections' we make whenever we reply or otherwise respond to what someone else has said by uttering words that make sense in relation to what has been said. Whenever we ask a question relating to what someone has just said, answer a question someone has asked, raise an objection to something that has been proposed, or merely express our agreement or disagreement with something that has been said, we make a pragmatic tie. A conversation is made up of a sequence of pragmatic ties. We may think of pragmatic ties as objective manifestations of understanding. They exemplify understanding from second and third person perspectives.

If we understand what someone has said then even if in fact we give no indication of this we would be *able* to say something in response that shows – or at least suggests – that we have understood: we would have been *able* to make a pragmatic tie thereto. To deny this would be to make nonsense of the statement that we have understood what the person has said. *The concern here is with the nature of understanding in general, i.e. with experience insofar as there is any cognitive element to it at all, and the conception of a pragmatic tie can easily be so extended as to pertain to any objective manifestation of understanding whatsoever*. For example, we may in some cases evince our

[228] See Penrose, op. cit. pp. 782-815, and J.C. Polkinghorne, The Quantum World (1984) pp. 78-82.

understanding of what has been said through smiling or laughing, raising our eyebrows, rolling our eyes, clearing our throat, turning away from the speaker or by carrying on more emphatically with what we are doing. We may evince our understanding of what we can see by doing something or saying something – or by ‚deliberately' not doing so. Through our current bodily movements we may show that we have understood something that we have seen, heard etc. in the past – perhaps years in the past. The conception of a ‚pragmatic tie' is intended to cover all such cases.[229]

B) Manifestations of Understanding and Fully Explicit Law-like Statements

Pragmatic ties, it has been argued, are *causal* connections.[230] What would have to be the case for the causality involved to be such that it is not fully covered by any law-like statements? The answer is that any such causal connection would have to be such that there could be no statement of the form ‚if the past and the present of the person is such and such then the person would make such and such bodily movements' could fully capture all the understanding that is involved in the person's making the pragmatic tie. Let us consider in turn the antecedent and the consequent clauses required of such a supposed ‚pragmatic-tie covering' law-like statement.

The antecedent clause of the law-like statement required would have to refer to what might be called the *causal side* of the pragmatic tie, i.e. to all that pertains to the current circumstances of the person concerned and to any of the person's past history which is relevant to our being able to make sense of why

[229] This is a natural extension of the conception of a ‚pragmatic tie' introduced in R. Green's The Thwarting of Laplace's Demon, op. cit.

[230] In his paper "Causes and Objects of Some Feelings and Psychological Reactions" from Ratio (vol. 4, no. 2, Dec. 1962) reprinted in Philosophy of Mind ed. Stuart Hampshire (1966) pp. 143-169, David Pears considers the following examples in regard to Hume's account of causation: ‚I was pleased by the publication of my letter.' ‚His behaviour made me angry.' ‚I am depressed by my lack of money.' ‚I was amused by his remark.' and ‚The explosion made me jump.' Except for the last each of these remarks may be regarded as a pragmatic tie – involving something concerning the person's past experience and what he or she is now saying. They are *causal* connections. Pears is disinclined to call them causal connections because "…if the word ‚cause' here does not at least mean ‚sufficient condition' or ‚sufficient condition in similar circumstances', what can it mean?" The answer is that the remarks provide any listener with good grounds for inferring things about how the person is likely to behave in response to various future contingencies. As to how the person is able to make such statements that is another matter and I have nothing to say about it. But the statements themselves simply state causal connections.

the person has spoken or otherwise behaved as she has. There are no *a priori* restrictions on what might be relevant and we know, for example, that people readily take into account such things as subtle changes in other people's facial expressions or in the tone of their voice, etc. Something that happened a long time ago may be very relevant to what is said here and now. Nor are there any *a priori* restrictions on the kinds of descriptions under which the things that are relevant to our being able to make sense of people's pragmatic ties may be referred to.

The consequent clause of the supposed pragmatic tie-covering law-like statement would have to refer to what might be called the *effect side* of the pragmatic tie, i.e. to the bodily movements the person concerned makes in effecting the pragmatic tie. Two elements may be distinguished to this. The first, and the more obvious, pertains to the actual bodily movements the person makes in saying or doing whatever it is that she has said or done. Suppose, for example, that I am at a party with a group of people one of whom is maintaining that ‚‡travelling back in time' is possible and I respond by saying "That's rubbish." Then the consequent clause of any law-like statement that could cover my pragmatic tie would have to *refer*, under some description or other, to the actual physical event of my saying this, i.e. to the speech-generating movements involved as well as to the movements involved in the changes to my facial expression, gestures, and orientation in relation to those whom I am addressing. For pragmatic ties are made by our producing bodily movements of various kinds, and so any pragmatic tie-covering law-like statement would have to refer to the relevant movements. I am here using the word "refer" in an *extensional* sense. The three year old child who speaks of the sun refers – in this extensional sense – to an immensely large and dense concentration of electrons, ions and atomic nuclei simply because this is what the sun *is*.

But there is a complication. For there can be no *a priori* restrictions on *how* the consequent clause of our would-be pragmatic tie-covering law-like statement refers to the actual bodily movements made by the person concerned in making her pragmatic tie. These movements might be referred to under any of indefinitely many different descriptions. For example, the bodily movements referred to when someone responds to what someone else has said

by uttering the words "that's rubbish" might be described as "speaking impatiently", "being deliberately provocative", "voicing one's true feelings", "speaking in English" or "uttering three syllables", etc. So it is conceivable that a pragmatic tie could be covered by a law-like statement when the bodily movements made in effecting it are referred to under some descriptions but not under other descriptions. It is conceivable, then, that our pragmatic ties might be causally necessitated only in certain respects. It is conceivable, for example, that there is some such law-like statement as ‚under such and such conditions so and so would speak impatiently' where I am the person concerned and the conditions in question are my being with a group of people talking about time travel, in which case although my saying "that's rubbish" would not, in so many words, have been covered by this law-like statement my speaking impatiently would have been and *to this limited extent* at least my utterance would have been causally necessitated.[231]

Such a possibility should not be ruled out from the outset. The complication that our pragmatic ties might be covered in certain *respects* by law-like statements has to be acknowledged. Fortunately the complication can be bypassed. To see how, a second, and less obvious, ‚element' of the effect side of our pragmatic ties needs to be considered. For there is more to the making of a pragmatic tie than merely the uttering of certain words or the making of certain other bodily movements in a context where the uttering of these words or the making of these bodily movements makes sense. For the person who utters the words has to utter them *with understanding*. How, then, could a supposed pragmatic tie-covering law-like statement meet the requirement that the bodily movements (extensionally) referred to by its consequent clause would be made ‚with understanding'? As explained in chapter six, such understanding involves having the appropriate behavioural propensities, being disposed or ready to say or do certain kinds of things and to refrain from saying or doing other kinds of things in response to all kinds of future contingencies. Somehow or other, then, a supposed pragmatic tie-covering law-like statement's consequent clause would have to address this

[231] But even here I *may* not have spoken but may have evinced my impatience in another way. *Or* the circumstances may have been such that I was feeling so happy that nothing could disturb my equilibrium.

fact. It would be no good simply to stipulate that the bodily movements that constitute the effect side of the pragmatic tie be produced „with understanding'. Whatever it is that distinguishes the production of bodily movements *with* understanding from their production *without* – and this has to do with having the right behavioural propensities and states of readiness – would have to be specified, i.e. described completely, precisely and unambiguously. Otherwise the causality involved in the production of these bodily movements would not be fully in accord with the cause/law thesis. It is in having to meet this requirement where, I shall try to show, it can be seen that a pragmatic tie-covering law-like statement would be impossible *a priori*.

It is known that as a matter of empirical fact there are law-like statements – even though in some cases they are too complicated in practice to formulate precisely – covering such things as the stars in their courses, changes in the weather and earthquakes. By contrast, we have not learned as a matter of empirical fact that there are any law-like statements covering our speech with one another. On the face of it certainly the facts speak against there being any such law-like statements. The comparatively few generalisations that are true of human behaviour[232] are not at all precise and invariably require *ceteris paribus* qualification. This is not to say that the few psychological generalisations that we know of are of little importance. They are among the most important truths that we know: the person who does not know under what kinds of conditions people tend to get angry or upset or to become happy or pleased is scarcely able to participate in human society. But most of our modest stock of psychological generalisations has been the common knowledge of humankind since the Stone Age and it cannot have been much added to since then. While it is true that the lack of any evidence of there being precise and non-*ceteris paribus* psychological law-like statements is not evidence of their non-existence, all human experience over thousands of years suggests that there are none. In section C it will be argued that we can know *a priori* that there could be none. From the same considerations it should also become evident that the complication spoken of above regarding the

[232] Few that is in comparison with the immense variety and richness of human behaviour.

possibility of our pragmatic ties being covered in certain respects by law-like statements is avoided.

C) Manifestations of Understanding as Presupposing Endlessly Many Possible Interpretants by their Producers

It is easy to tell whether or not the words uttered by a person have been uttered with understanding if we are free (and able) to engage the person in a conversation relating to what, on the face of it, the person has said. If the person's utterance is indeed the effect side of a pragmatic tie then her *subsequent* responses to our various questions and remarks will, in due course, establish the fact in our minds as a certainty. Were somebody else to engage the person in a conversation and we, understanding the language being spoken, were free to observe this then the same would be true. In regard to this matter, though, it is more helpful to adopt a second rather than a third person perspective. Any limitations in the person's understanding in making her initial pragmatic tie could then be identified through asking the person suitable questions etc. and thereby steering her, as it were, into areas where her understanding begins to fail. But even her failures in understanding could assist us in establishing that with her first utterance the person did make a pragmatic tie – provided, that is, that these failures are *themselves* understandable, i.e. provided that we can make sense of them. Contrariwise, if in our subsequent conversation with the person she says nothing that throws any light on what, given the words she uttered, we would normally have assumed was her initial comment – something said with understanding – then we would have to suppose that she had not, despite what we first might have thought, spoken with understanding.

In short, whether someone has spoken with understanding depends on whether she could make subsequent pragmatic ties that we could make sense of in relation to her initial remark. Through taking into account a person's subsequent utterances we can remove any doubts as to whether the utterance he or she made initially effected a pragmatic tie. We began with our attention on just a single pragmatic tie – any pragmatic tie. We now find ourselves having to consider many *other* pragmatic ties – namely, any pragmatic ties that we can make sense of in relation to the first. How many of these other

pragmatic ties might there be? It will be argued here that we can know *a priori* that there is no limit to them: given that a person has made a pragmatic tie by saying something there are limitlessly many other things that the person might say the utterance of which during our subsequent conversation with the person would be relevant to our being or becoming certain that what the person initially said was said with understanding. In recognition of the work of C.S. Peirce I will call such subsequent *possible* pragmatic ties that a person might make possible *interpretants* of the initial pragmatic tie.[233] Through engaging the person in conversation we could prompt the person to produce various interrelated *concatenations* of interpretants. New sequences of interpretants could be started up and new connections could be made to sequences that have already occurred.

All this has a direct bearing on the requirement that for a law-like statement to fully „cover' the causation involved in one's making a pragmatic tie, its consequent clause would have to refer (extensionally) not only to the person's actual bodily movements in making the pragmatic tie but also to whatever it is that guarantees that these bodily movements have been made with understanding. From the foregoing it is now evident that the law-like statement would have to refer, under *some* individuating description or other, to each of the pragmatic ties that the person would make in the future – specifying the circumstances etc. in which these would be made – that would be interpretants of the pragmatic tie the person actually made and, I maintain, we can know *a priori* that this would be impossible because there would be no limit to the number of these possible interpretants: the supposed pragmatic tie-covering law-like statement would have to specify a limitless concatenation of possible interpretants of the person's actual pragmatic tie.[234] We would not *say*

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[233] See C. Hartshorne, and P. Weiss, The Collected Papers of Charles Sanders Peirce (1935), Vol. 5, paragraph 179. An excellent account of Peirce's idea of an „interpretant', one that brings out the virtual identity of this idea and that of a „pragmatic tie', is given by W.B Gallie. See his book Peirce and Pragmatism (1952) pp. 118-131. T.L Short has argued that Peirce's final account of signs and interpretants (in 1907) is different in fundamental respects from his initial account of 1866-9. See T.L. Short, "The Development of Peirce's Theory of Signs" in Misak, C. ed. The Cambridge Companion to Peirce (2004) pp. 214-40. However, the argument of section C) above stands in its own right, irrespective of whether Short's interpretation of Peirce's thinking is correct.

[234] In his Remarks on the Philosophy of Psychology vol. 2 ed. G.H von Wright & Heikki Nyman (1980), Wittgenstein comes close to drawing the above conclusion. Eg. "We judge an action according to its background in human life…" (624); "The background is the bustle of

of someone's utterance that it makes sense, or that the person has spoken as she has with understanding, unless the person could follow up what she has said with any of a limitless number of possible interpretants. We would only *count* the utterance of certain words as something *said* – with understanding – if the person concerned is *capable* of such a following up of interpretants. In other words, to speak with understanding presupposes being able to effect any of endlessly many possible cognitive syntheses of the present-future type discussed in chapter three where the „present' component comprises the words just spoken.

A possible objection might run as follows: *If we limit ourselves to verbal interpretants then there is only a finite number, since 1) we have a finite vocabulary, 2) we could not make sense of sentences that are too long, and 3) we live for a finite time. The number is of course huge and there is no way we could exhaustively explore them, but it is nonetheless finite.*[235] For the following reason I do not think this essentially mathematical point undermines the above consideration regarding interpretants. Since we know that our ability to understand things depends causally on the brain's having the requisite structural complexity, if this causal dependence is to be covered by law-like statements then the complexity of the behavioural propensities described by these statements cannot be enormously much out of proportion to the complexity of the brain's structure which is *ex hypothesi* to implement (or encode) these behavioural propensities, propensities for making suitable interpretants of what one has said with understanding. The size of the numbers to be considered in connection with human language have to be of the same order of magnitude as are the numbers to be considered in connection with the brain. The human neo-cortex has „only' "about 10,000 million neurones",[236] whereas any attempt to spell out fully and in detail all the possible interpretants of something that one has said with understanding would in many

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life" (625); "And it is the very concept „bustle' that brings about this indefiniteness…" (626); and, especially in 629 which is also in Zettel 567, "How could human behaviour be described? Surely only by showing the actions of a variety of humans, as they are all mixed up together. Not what *one* man is doing *now*, but the whole hurly-burly, is the background against which we see an action, and it determines our judgment, our concepts, and our reactions." My conclusion that there is for any pragmatic tie a limitless concatenation of possible interpretants may be seen as a development of this thought of Wittgenstein's.

[235] I thank Richard Corry for suggesting this objection.

[236] K. Popper, and J. Eccles, The Self and Its Brain (1977) p. 230.

cases be to undertake a task that *could* – if one were mad enough to attempt it – be continued indefinitely. For the most disparate things can often be shown to be related in some way that reflects one's understanding of what one has said, whilst understanding can also be displayed by noting how all kinds of things are *not* relevant to what one has said. This suggests that the brain's structure is not great enough to encode all the behavioural propensities constitutive of our understanding the things we say that would need to be described by law-like statements if the causation involved in our understanding things is covered by law-like statements. This, of course, is only an estimate, and perhaps the numbers involved could be estimated more precisely, but the foregoing points are surely enough to justify our taking the „endlessly many possible interpretants' consideration very seriously.

Therefore, I maintain (though it comes down to a matter of judgment) that we can know *a priori* that there could be no such thing as a pragmatic tie-covering law-like statement. The complication mentioned earlier is avoided because under whatever description any would-be pragmatic tie-covering law-like statement refers to the actual words or other bodily movements through the production of which a person makes a pragmatic tie, since their production with *understanding* would presuppose being able and ready to produce an indefinitely extendable concatenation of possible interpretants and the would-be law-like statement would have to identify each of these possible interpretants individually, *any* attempt to identify them all individually would be to attempt an endless task.[237]

There is an interesting contrast here with the playing of well-defined board and card games such as chess, drafts, Ludo or Five Hundred. The moves or plays that we make in these games may be regarded as analogues of the pragmatic ties which we make in everyday life. We can ask how far, if at all, the move or play that a player has made makes sense just as we can ask how far, if at all, the utterance of certain words by a person makes sense. In chess, for example, we can ask a player about the consequences, whether favourable

[237] The foregoing constitutes both an explication of what Alan Turing's "Imitation Game" would really involve and an argument to show that everyday human discourse could not be satisfactorily simulated by a machine, because (by definition) a *machine's* every operation would be completely specifiable. See A. Turing, "Computing Machinery and Intelligence", in Mind Oct. 1950, 59, pp.433-460. Reprinted in E. Feigenbaum, and J. Feldman, eds. Computers and Thought (1963) pp. 11-35.

or unfavourable, of the various possible lines of play stemming from the move he has made as well as about the consequences of his *not* making that move. Hereby, as with pragmatic ties in everyday life, a concatenation of interpretants is opened up. But there is a fundamental contrast between the two cases. In the case of chess the number of possible interpretants, i.e. saying things about why one made a particular move, is limited and in fact the concatenation of the interpretants of a given move can be exhaustively explored. In the case of a pragmatic tie in everyday life, on the other hand, the number of its possible interpretants is limitless and hence cannot be exhaustively explored.

The claim that we can know *a priori* that there could be no pragmatic tie-covering law-like statements is a very strong claim and it might seem that my argument for it is not correspondingly strong. In reply I should perhaps say that in calling what I have said in support of this claim an *argument* I am using the word "argument" in a broad sense.[238] All that I have done is introduce and explain the terms "pragmatic tie", "interpretants" and "concatenation of interpretants" and invited the reader to try to „see' whether there could be such a thing as a pragmatic tie-covering law-like statement. What might look like a step by step argument is really a stage by stage explication of a single consideration. The meaning of the critical phrase "a limitless concatenation of possible interpretants of an initial pragmatic tie" is scarcely evident on a first reading and most of what I have had to say has been an attempt to explicate it.

If our pragmatic ties could not be covered by any law-like statements other than – in some cases – those of a vague or *ceteris paribus* sort then the causality they involve cannot be determined just by the relevant laws of nature.[239] What has been said in support of this conclusion is of an *a priori* character. As to whether they are analytic *a priori*, synthetic *a priori* or *a priori* in some other sense is more difficult to say. I do not want to be

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[238] It is not an argument in the traditional sense. What we are talking about here is understanding itself. We are engaged in the exploration of an idea, we are *explicating* something, *demonstrating* something – to follow it one needs to reflect on our experience of understanding. It is much more fundamental than argument.

[239] The idea of a kind of causality that is not determined by the laws of nature is integral to Whitehead's conception of prehension. See A.N. Whitehead, Process and Reality eds. Griffin, D.R. and Sherburne, D.W. (1929). Wittgenstein also took the idea very seriously. See Wittgenstein's Zettell eds. G. Anscombe, and G. von Wright, trans. G. Anscombe, (1967) passages 608-613.

committed to all of Kant's philosophical distinctions here. In part I have tried to say something of what our concept of understanding *does* involve and in part I have tried to say something of what our concept of understanding *ought* to be taken to involve. The grounds for the latter – as to how we should conceive of understanding as such – concern very general facts about the way understanding is manifested in human life. That description and prescription have been inextricably mixed is of a piece with the fact that our general conception of understanding is not at all clear cut.[240]

To sum up, it has been argued that the causality requisite for one's making a pragmatic tie – an objective manifestation of understanding – could not in principle be spelt out because there would be no specifiable limit to the number of *other* pragmatic ties – each an interpretant in Peirce's sense of the first pragmatic tie – that one would have to be able to make in response to possible future discussion and questioning if one's pragmatic tie is to *be* a genuine manifestation of understanding. And, given that (from part three of chapter five) pragmatic ties are *causal* connections, it follows that these causal connections cannot be reduced to cases of rule-governed succession.

The argument is not an argument for free-will. Rather, since whatever we might mean by "free will" understanding is a prerequisite for it, the argument implies that free-will, *however* this is to be understood, is incompatible with determinism. Also, the argument implies that determinism is false anyway, and false not just because there is an element of chance in the way things happen.

Although the argument is not an argument for free-will it does throw some light on what our conception of free-will ought to be. It implies that Kant's conception of freedom as conveyed in his treatment of the Third Antinomy is incorrect: free-will should not be thought of as requiring any disengagement from the causal concatenations of nature or of human life. Rather, it should be thought of as requiring a distinctive *kind* of causality – namely, the kind of causality that has been partially explicated in this thesis.

[240] It is worth noting that psychologists prefer to talk of „intelligence' rather than „understanding' and philosophers often prefer to talk about „reason' rather than „understanding'. „Understanding' is a broad and difficult notion and to shed light on it we need something more than just argument.

Nonetheless there is a close parallel between what Kant says about freedom in his treatment of the Third Antinomy and what has been argued for here. Kant holds that we can know nothing as to *how* free-will is possible. We can know only that it is not ruled out by anything that we can know. Something similar may be affirmed on the strength of what has been argued for here. For, given that free-will (whatever we may mean by it and assuming it exists) presupposes understanding and that, as has been argued, the causal constitution of understanding is unspecifiable, it follows that it would be impossible fully to explicate either „understanding' or the „free will' that presupposes it.

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